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The Commonwealth of Massachusetts

ANNUAL REPORT
OF THE
METROPOLITAN DISTRICT
WATER SUPPLY COMMISSION
FOR THE
YEAR ENDING JUNE 30, 1946



Document Approved by the Commission on Administration and Finance

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REPORT OF THE METROPOLITAN DISTRICT WATER SUPPLY COMMISSION

To the Honorable the Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled.

The Metropolitan District Water Supply Commission, established under the provisions of Chapter 375 of the Acts of 1926, respectfully presents its

TWENTY-FIRST ANNUAL REPORT

I. ORGANIZATION AND ADMINISTRATION

William T. Morrissey continued as Chairman of the Commission. Edward J. Kelley and Charles H. Brown continued as Associate Commissioners, Mr. Kelley throughout the fiscal year and Mr. Brown until his death, February 4, 1946. Mr. Brown was succeeded by Louis B. Connors, February 20, 1946. R. Nelson Molt continued as Secretary. Karl R. Kennison continued as Chief Engineer, with other engineering personnel as described in his report, attached hereto.

The offices of the Commission were continued at 20 Somerset Street, Boston, together with the Headquarters Office of the Engineering Department. Field offices were continued at the Administration Building near Winsor Dam in Belchertown and at other locations indicated in the accompanying report of the Chief Engineer.

The Commission, as organized by Chapters 375 and 321, has continued the work provided for under those acts and has carried on other duties as a member of various Special Legislative Committees. The Engineers, under the direction of Chief Engineer Kennison and upon instructions of the Commission, have secured and provided much data and furnished many plans and specifications for use of these special committees.

Data have been secured for the purpose of clarifying the provisions of law affecting the conditions of those entering the Metropolitan Water District under the flat rate fixed at \$40.00 per mil. gals.

Investigations and procurement of data were undertaken for use of the Special Legislative Committee studying the water need of the cities and towns in the Ware, Swift, Quaboag, Chicopee, Connecticut and Millers River Valleys, and the possible utilization of Quabbin Reservoir or the supply of the City of Springfield as a source of supply.

Further studies were made of the method of improvement of the conditions of the Neponset Valley for use of a Special Legislative Committee which reported to the General Court in 1946.

The Commission and the engineers also have been engaged in carrying out the provisions of Chapter 705 of the Acts of 1945 for the improvement of the Metropolitan sewerage systems and a report thereon is being filed.

II. SWIFT RIVER SUPPLY

During 1946 the draft upon Quabbin Reservoir to Wachusett was 10,475,000,000 gallons. The reservoir reached elevation 529.5 during June and the Commission on June 22 released from the reservoir the first discharge of water through the spillway to the Swift River below Winsor Dam.

The Swift River diversion tunnel was closed August 7, 1939 and storage first started in the main reservoir during the period until a total storage of 411,600,000,000 gallons was reached. There have been the following yearly releases to the Metropolitan water district from the reservoir:

1941	.	.	.	20,461,500,000
1943	.	.	.	17,020,400,000
1945	.	.	.	22,007,800,000
1946	.	.	.	10,745,000,000
				70,234,700,000

From the Ware River during this seven-year period, there were the following yearly diversions to the Metropolitan water district:

1939	.	.	.	541,600,000
1940	.	.	.	1,857,700,000
1941	.	.	.	2,000,000
1942	.	.	.	554,700,000
1944	.	.	.	1,359,000,000
1946	.	.	.	169,700,000
				4,484,700,000

Since the completion of the Quabbin Aqueduct and the Swift River Diversion Tunnel there were two periods of excessively high water, the fall hurricanes of 1938 and 1944. The work of the Commission has aided materially in reducing flood damages on the Ware, Swift and Chicopee rivers and with a plan of operation co-ordinating the release from Wachusett Reservoir which has been established, it will provide a potent means of further reducing the effect of flood waters.

During the year the Commission requested, and secured, permission of the Department of Public Health to divert the flow of the Ware River in excess of 85 m.g.d. from the period between June 10 and November 15. However, no diversion was made.

Reforestation of the watershed area was carried on as was the clearing before the rising waters of the reservoir using the boats "Enfield" and "Greenwich" to transport workmen. Work in the suppression of gypsy moth and white pine blister rust was undertaken in cooperation with the U. S. Department of Agriculture.

The Commission reports no extensive fires on the watershed area during the year. The fire lanes and access roads were maintained and forest fire-fighting equipment kept in readiness during the periods of fire hazards.

The collection of water samples from the reservoir, as well as entering streams and the Ware River, was continued. Analyses of these samples were made at the laboratory at the Administration Building, Belchertown and stream gauging stations were continued in cooperation with the U. S. Geological Survey on the Ware, Swift, Chicopee and Connecticut rivers.

Topographical and real estate surveys were being completed and data collected relative to the water supply of the cities and towns in the Ware, Chicopee, Connecticut and Millers River valleys for use of the Special Legislative Committee as well as topographical surveys for the same.

The Metropolitan police has continued its headquarters in the Administration Building and the Commission has maintained the building as well as Shaft 12 and the Outlet Building. Full use by the public of the roads to and over the dam and dike and parking space on Quabbin Hill has been permitted and the Observation Tower and convenience stations available for use.

The Commission awarded to the lowest bidder, after publicly advertising for bids, a contract for the installation of the hydro-electric equipment at Winsor Dam Outlet Works.

The Commission acquired 12 acres of land in New Salem during the year making possible better access for fire lanes and an access road to the Prescott Peninsula.

Quabbin Park Cemetery was maintained and cared for and 31 interments were made therein during the year. As usual, Memorial Day services were held by the veterans on that day.

III. WARE RIVER SUPPLY

The Commission continued the maintenance of the Intake Building and Shaft 8 at Coldbrook and the Outlet Building and Shaft 1 at Oakdale. The Commission granted further locations to the U. S. Army Engineers for making borings for the location of Barre Falls Flood Control Dam. The Commission instructed the Chief Engineer to fully investigate the design of the proposed dam as it was prepared by the Army engineers and to report to the Commission the progress that is being made on the same. The Commission received written assurance that the storage would be released at such times and in such manner as would not affect the rights of the Commonwealth nor the amount of water that could be by law diverted by the Commission.

Maintenance of the Outlet Building at Shaft 1 at Oakdale and the Intake Building and Shaft 8 at Coldbrook and the grounds was continued and Quabbin Aqueduct kept ready for operation.

Minor repairs to the disc-valve at Shaft 8 were completed and an inspection of the aqueduct from Shaft 12 at Quabbin Reservoir to Shaft 4 at Rutland was made by the engineers.

Studies were continued of the plans for a connection to the Holden-Rutland sewer to dispose of the sewage from the towns of West Boylston and Boylston, funds for the construction of such a connection having been provided for by the Legislature of 1946 by Chapter 515 of the Acts of that year.

Operation of the Rutland-Holden Trunk Sewer was continued and with the acceptance formally in September by the town of Rutland the full functioning of that entire system was possible.

The Commission authorized the preparation of plans and specifications for a water wheel and appurtenances to develop electrical energy at the Outlet Building, Oakdale.

IV. HULTMAN AQUEDUCT

The Commission instructed the Chief Engineer to secure data relative to the discontinuance of the Old Arched Viaduct which carried the Wachusett Aqueduct across the Assabet River. In view of the fact that this structure provided the sole means of getting the supply from Wachusett and Quabbin reservoirs to the Metropolitan water district and had presented a vulnerable target all during the war period for sabotage, it was clearly apparent that it should be eliminated. Upon the receipt of the report of the Chief Engineer and upon his recommendation the Commission approved the plan and specifications and publicly advertised a contract for the construction of an inverted siphon under the river thus removing the hazard to the supply to Boston. A contract was awarded for the construction of the same to the second lowest bidder, the low bidder not having complied with the specifications in not presenting adequate plans to safeguard by-passing of the aqueduct flow.

Maintenance of the aqueduct and building at Marlborough and Norumbega Reservoir and the right-of-way was continued. Discharge of water directly from Wachusett Reservoir through the aqueduct and by-pass to Weston Aqueduct mains was continued.

The Legislature appropriated the sum of ten million dollars for the construction of the City Tunnel from Charles River to the Chestnut Hill Pumping Station and for the construction of a distribution reservoir and other works. The Commission had already approved the plans and specifications for the construction of the City Tunnel, so called, and immediately approved the contract form and publicly advertised for bids to be opened October 30.

Work under a contract for sub-surface investigation for borings in the counties of Middlesex, Norfolk and Suffolk was completed and additional information obtained at City Tunnel shaft sites, the site of the Blue Hills Reservoir and Waban Hill Reservoir.

The Commission, in view of its recommendation to the General Court in its last annual report advising of the necessity of having a secure delivery of a safe and adequate supply of water under pressure due to the increasing chance of mechanical failure of the old pumps at Chestnut Hill Pumping Station and the immediate increased demand by other communities for water, is prepared to go forward with the work rapidly.

Topographical surveys have been made in the Blue Hills Reservoir area and along the line of the proposed connecting pipe line and of other new connections to existing distribution reservoirs.

V. LITIGATION

The Ludlow Associates have filed Exceptions in its petition against the Commission for damages caused by the diversion of the Swift River and the office of the Attorney General represents the Commission. The arguments have not been heard by the Honorable Court.

The Commission prepared and furnished such data and exhibits as were requested by the Attorney General for use in the preparation of the Commonwealth's Brief.

VI. FISCAL

Under the provisions of Chapter 541 of the Acts of 1941 the Commission submitted to the Budget Commission estimated expenditures for the allotment periods of the fiscal year.

VII. OTHER REPORTS

The Commissioners, as members of the Special Legislative Committee under Chapter 59 of the Resolves of 1945 for the investigation of the Neponset Valley, joined in the report of that committee and also under Chapter 83 of the Resolves of 1945 joined in a report filed by that committee. The members also join in the report of the enlarged water commission engaged in carrying out the provisions of Chapter 705 of the Acts of 1945 filed with the Great and General Court.

The Commission appends hereto a statement of the expenditures and disbursements for the fiscal year, and from the date of its appointment.

Respectfully submitted,

WM. T. MORRISSEY, *Chairman*

JOHN R. SHAUGHNESSY, *Associate Commissioner*

LOUIS B. CONNORS, *Associate Commissioner*

20 SOMERSET STREET, BOSTON, MASSACHUSETTS.

January 8th, 1947.

REPORT OF THE CHIEF ENGINEER

To the Metropolitan District Water Supply Commission.

GENTLEMEN:—The following is a report of the engineering department for the year ending June 30, 1946. There are included certain statistical and other data covering the calendar year:

Miscellaneous work was continued on the reforestation of Quabbin Reservoir watershed lands, access roads and fire lanes and fencing, and on seasonal clearing ahead of the water level which on May 30 reached Elevation 528, the level of the masonry sill of the stop-log section of the Winsor Dam Spillway. Work was commenced on the installation of a waterwheel to generate electric power at Winsor Dam, which had been delayed on account of the war. Pending the completion of construction, the various completed portions of the Quabbin Reservoir works, the Quabbin Aqueduct and the Hultman Aqueduct have been maintained.

The plans and specifications were completed for the extension of the Hultman Aqueduct to Chestnut Hill by means of a deep rock tunnel, and for the construction of a siphon to bypass the Assabet-Bridge section of the Wachusett Aqueduct. Work was continued on the Metropolitan sewerage projects. Construction was commenced of the sewage treatment plant on the South Metropolitan System at Nut Island. Designs were in progress for the storm relief sewer in Alewife Brook, and studies underway for marginal relief conduits along the Charles River Basin.

The engineering organization was materially increased during the year.

ORGANIZATION

Stanley M. Dore, Assistant Chief Engineer, continued to act as deputy chief.

Walton H. Sears, Mechanical Engineer, continued in charge of designs and specifications for plant and equipment.

Frederick W. Gow, Division Engineer, continued in charge of the Reservoir and Aqueduct Division.

Lawrence M. Gentleman, Associate Civil Engineer, continued in charge of the detail work on design and contract and working drawings.

From time to time, the Commission employed the services of consulting engineers: Metcalf & Eddy of Boston, Greeley & Hansen of Chicago, James F. Sanborn of New York, and others.

The assignment of employees under the direction of the Chief Engineer at the end of the fiscal year and of the preceding year was as follows:

	June 30, 1945	June 30, 1946
Headquarters, Designing Division		
20 Somerset Street, Boston	37	52
Reservoir and Aqueduct Division		
Administration Building at Winsor Dam, Belchertown	20	24
Ware River Intake Building, Coldbrook	11	11
City Tunnel Office, 107 Charles St., Auburndale	23	67
Total Engineering Force	91	154

HEADQUARTERS OFFICE

Watershed Real Estate.—The total area of real estate acquired for Quabbin Reservoir to June 30 is 80,961 acres, of which 12 acres were acquired during the year in the Town of New Salem. Settlements have been secured covering 79,239 acres.

The total area of real estate acquired for sanitary protection in the Ware watershed to June 30 is the same as previously reported, 21,097 acres. Settlements have been secured covering 19,915 acres.

The previous published Annual Report contains a table showing all real estate takings for the Quabbin Reservoir and Ware development.

Hultman Aqueduct and City Tunnel Real Estate.—During the year, no additional takings of real estate were made for the City Tunnel. Of a total of 563 acres of land taken in fee and easement for the purposes of the Hultman Aqueduct, including the City Tunnel, settlements have been secured covering 560 acres.

Nut Island Sewage Treatment Plant Real Estate.—During the year 12 acres of real estate were acquired for the Nut Island Sewage Treatment Plant in Quincy.

Water Diversion Damage Claims.—Only incidental work was done on data in connection with the suit brought by the Ludlow Manufacturing Associates. Their appeal to the Supreme Court for adjudication of exceptions in the case which resulted in a verdict favorable to the Commission is still pending.

Record Drawings.—Work was continued on the record drawings of the Hultman Aqueduct.

Hydrographic Data.—Gaging stations were continued in cooperation with the United States Geological Survey on the Ware River at Coldbrook, on the East Branch of the Swift River at the regulating dam, on the Chicopee River at Indian Orchard, and on the Connecticut River at Thompsonville, Connecticut. Level recorders were also maintained by the Commission on the Chicopee River at Red Bridge and on Beaver Brook south of Quabbin Dike.

Examination of the waters of the Ware, Swift and Chicopee rivers included analyses of samples taken.

Maintenance of Records.—Records of assignments of lots and interments in Quabbin Park Cemetery were maintained. Assistance was given to the Secretary's office in the apportioning of costs and the preparation of financial statements. Inventory records of tools and equipment in the Commission's offices and storehouses were kept up to date.

CONTRACTS AND SPECIFICATIONS

Plans and specifications were prepared for the following contracts for which bids were opened during the fiscal year:

Contract 133, for constructing an inverted pipe siphon on the Wachusett Aqueduct at the Assabet River in the Town of Northborough.

Six bids were received May 1, ranging from \$160,377.90 to \$302,312.67. The bid of the low bidder was based on a plan for bypassing the aqueduct flow which lacked the safeguards required in the specifications. The contract was executed August 28, 1946, for \$197,758.00 with Berke-Moore Company, Inc., Brookline, Mass., the next to the lowest bidder.

Contract 134, for making wash and core borings in the Counties of Middlesex, Norfolk and Suffolk, to complete the investigations for the location of the City Tunnel section of Hultman Aqueduct, and its future extensions.

Two bids were received July 3, 1945, for \$8,492.25 and \$12,751.20. The contract was executed August 9 with Sprague & Henwood, Inc., Scranton, Pennsylvania, the lower bidder.

Contract 136, for constructing earthwork, excavation and fill, at and near Nut Island in the City of Quincy, to prepare the site of the sewage treatment works at the terminus of the South Metropolitan Trunk Sewer.

Eight bids were received September 27, 1945, ranging from \$478,814.38 to \$979,363.35. The contract was executed October 18 with V. Barletta Company, Roslindale, Mass., the lowest bidder.

Contract 138, for making soundings on the location of the sludge disposal line from Nut Island to President Roads in Boston Harbor in the Town of Hull, and the cities of Quincy and Boston. Only one bid was received November 8, 1945, for \$14,717.50. The contract was executed November 28 with the Greenland Drilling Company, Teaneck, New Jersey, the only bidder.

Contract 141 (A, B), for furnishing and delivering engines, generators, blowers and pumps for the Nut Island Sewage Treatment Plant in the City of Quincy. Bids were received February 13:

(A) Three bids were received for two 5,000 C.F.M. dual fuel engine-driven blowers, two 750 K.V.A. dual fuel engine-driven generators and one 750 K.V.A. gas engine-driven generator, for \$194,778.00, \$247,860.00 and \$259,372.00. The request of the low bidder, in view of price increases, that he be allowed to withdraw his bid thirty days after the opening, was granted by the Commission, which required this time to investigate the various types of engines submitted and to have the existing installations inspected and their performances tested.

(B) Two bids were received for four mixed-flow type sewage pumps for \$91,239.00 and \$162,614.00.

In addition bids were received for the combination of both groups A & B, the lowest for any such combination being \$330,374.00. The contract was executed in that amount May 31, with the Worthington Pump and Machinery Corporation, Harrison, New Jersey, the low bidder for the combination.

Contract 142 (A, B, C, D, E, F, G, H), for furnishing and delivering grit and sludge removal equipment, bar screens and comminutors for the Nut Island Sewage Treatment Plant in the City of Quincy. Bids were received January 9:

(A, B) Three bids were received for six grit collectors and one grit conveyor, ranging from \$23,146.00 to \$32,180.00.

(C) Two bids were received for one grit hopper, two grit washers and two grit elevators, for \$16,028.00 and \$17,200.00.

(D, E) Four bids were received for twenty-four sludge and scum collectors and six sludge cross collectors, ranging from \$67,997.00 to \$78,650.00.

(F, G) Three bids were received for six scum cross collectors and three scum conveyors, ranging from \$15,499.00 to \$21,674.00.

(H) Only one bid was received for two medium mechanically cleaned bar screens and three fine mechanically cleaned bar screens, for \$15,257.00.

The contract for all these groups A to H, inclusive, was executed in the amount of \$137,927.00, March 26, with the Jeffrey Manufacturing Company, Columbus, Ohio, the lowest bidder for each group and for the total.

Contract 142 (I), for furnishing and delivering six comminutors for the Nut Island Sewage Treatment Plant in the City of Quincy. Only one bid was received January 9, for \$40,244.00, subject to increase with OPA approval by not more than \$4,000. The contract was executed March 19, with the Chicago Pump Company, Chicago, Illinois, the only bidder.

Contract 144 (A, B, C, D, E, F, G), for furnishing and delivering cranes, hoists, meters, aeration system, digestion tank equipment and chlorinators for the Nut Island Sewage Treatment Plant in the City of Quincy. Bids were received May 1:

(A, B) Only one bid was received for one 7½-ton traveling crane, three short-span traveling cranes, one chain hoist and three electric hoists, for \$12,105.28, subject to increase with OPA approval by not more than \$1,428.68. The contract was executed September 17, 1946, with Robert Abel, Inc., Boston, Mass., the only bidder.

(C) Bids for two alternate types of diffuser tube aeration systems were received from only one bidder for \$33,954.00 and \$40,230.00, respectively. The contract was executed September 16, 1946, for \$33,954.00 with the Chicago Pump Company, Chicago, Illinois, the only bidder.

(D) Only one bid was received for one 120-inch and two 6-inch Venturi meters, for \$10,831.00. The contract was executed September 17, 1946, with Builders-Providence, Rhode Island, the only bidder.

(E, F) Only one bid was received for two secondary digestion tank covers and six supernatant selectors, for \$55,088.00. The contract was executed October 3, 1946, with the Pacific Flush Tank Company, Chicago, Illinois, the only bidder.

(G) Two bids were received for chlorinating equipment, for \$47,806.00 and \$48,927.00. The bid of the low bidder did not meet the requirements of the specifications. The contract was executed September 23, 1946, with Wallace & Tiernan Company, Inc., Newark, New Jersey, the next to the lowest bidder.

Contract 147, for construction of bituminous surfacings on Sea Avenue and Island Avenue in the City of Quincy.

Two bids were received May 15, for \$15,288.81 and \$16,776.10. The contract was executed June 27, with V. Barletta Company, Roslindale, Mass., the lower bidder.

Contract 150, for installing the hydro-electric power plant and completing the installation at the Winsor Dam Outlet Works in the Town of Belchertown.

Two bids were received February 27, for \$39,198.10 and \$62,564.60. The contract was executed March 27, with Berke-Moore Company, Inc., Brookline, Mass., the lower bidder.

Design

Studies and designs were continued of structures proposed to be constructed but not yet bid, as follows:

Power Development at Quabbin Aqueduct. Studies were continued of the development of power in the new station at the outlet works of Quabbin Aqueduct in the Town of Oakdale.

Wachusett Watershed Protection. Studies were continued in cooperation with the Quabbin Reservoir and Aqueduct Division of a system for diverting from the watershed of Wachusett Reservoir the sewage of Boylston and West Boylston.

Hultman Aqueduct—City Tunnel. Plans and specifications for the extension of the Hultman Aqueduct by the City Tunnel from Shaft 5 at the Charles River to Chestnut Hill were practically completed, and the contract for sinking two construction shafts was advertised for the opening of bids on October 30, 1946. Miscellaneous studies were continued of plans for the proposed future extension of the City Tunnel.

Distributing Reservoirs. Studies and designs were continued for the modification of, and new connections to, existing distributing reservoirs, which must follow the completion of the City Tunnel; and also for an additional distributing reservoir in the Blue Hills Reservation.

Barre Falls Flood Control Project. Studies were continued of the effect of the flood control project which the Federal Government is planning to construct at Barre Falls in the Ware River watershed. The Chief Engineer of the Commission continued as a member of an advisory board to assist the State Planning Board in its studies and recommendations to His Excellency the Governor on this and other similar Massachusetts projects. Agreement was reached with representatives of the United States Engineer office in Providence, Rhode Island, as to the general features which will govern the design of the Barre Falls Flood Control Project.

Neponset Valley Investigation. Assistance was rendered to the joint board for studying methods to improve the conditions of the Neponset Valley in the preparation of its report filed with the legislature of 1946.

Enlargement of Metropolitan Water District. Further studies were made and data assembled for assistance of legislative committees in the preparation of amendments clarifying recently enacted provisions affecting the conditions of entrance into the Metropolitan Water District, reducing the annual assessment commencing in 1946 to a flat rate of \$40 per million gallons and encouraging new cities and towns to join.

Chicopee Valley Water Supply. Studies were made and considerable data assembled for, and assistance rendered to, the Special Commission to investigate the water supply needs of municipalities in the valley of the Connecticut River and its tributaries. The studies included the possibility of supplying these communities with water from Quabbin Reservoir.

Sewerage Projects

Studies were continued on the five sewerage projects authorized in Chapter 705 of the Acts of 1945, for the improvement of the Metropolitan Sewerage Systems, actual construction being confined to the project for the Nut Island Sewage Treatment Plant. Work was commenced on the preparation of plans for the Alewife Brook Storm Relief Sewer Project.

Project 1—Nut Island Treatment Works. Sufficient progress was made on the designs for the proposed sewage treatment plant at Nut Island so that plans and specifications were practically completed for the construction of the aeration and sedimentation tanks, influent and effluent conduits, grit channels and main building substructure, which contract was advertised for the opening of bids July 31, 1946; and also for the construction of a digested sludge outfall and of diffusers over the outlets of two of the existing outfalls, which contract was advertised for the opening of bids October 16, 1946. The plan of the works is outlined in a flow diagram published in the previous report.

South Metropolitan Sewage Records. The collection of twenty-four-hour composite samples at about 8-day intervals for analysis of the amount of suspended solids was continued.

Project 3—Alewife Brook Storm Overflow Conduit. Studies were commenced of the conditions in the valley of Alewife Brook and the amount of sewage reaching the brook in storm overflows.

Projects 4 and 5—Charles River Basin Storm Overflow Conduits. Investigations were continued of conditions along both sides of the Charles River. An investigation of the conditions at Galen Street overflow was made on February 1, and recommendations to the town of Watertown resulted in the cleaning of that town's siphon pipe under the Charles River on May 9 and 10. Studies were made of the installation of floating booms at the outlet of Salt Creek and elsewhere to prevent the entrance into the Charles River Basin of oil and other objectionable floating material from the storm drains.

Boston Marginal Conduit. The recording levels at the Fens Gatehouse was continued and studies made looking to an alleviation of the condition of clogging by debris from the larger Stony Brook Conduit of the City of Boston.

Cambridge Marginal Conduit. The recording of levels at the Charles River Dam gatehouse was continued.

RESERVOIR AND AQUEDUCT DIVISION

The Quabbin Reservoir and Aqueduct Division continued in charge of all field work. This consisted of: Topographic and real estate surveys in the Quabbin Reservoir area, in the Ware River and Wachusett watersheds, along the Hultman Aqueduct, at the site of the proposed distributing reservoir in the Blue Hills, and in connection with the various sewerage projects; reforestation; reservoir reclearing and work on fire lanes and access roads; the work of the water analysis laboratory; investigations in the Chicopee River Valley; the collection of data on flow in the South Metropolitan Trunk Sewer and the collection and analysis of sewage samples; and the maintenance and operation of Quabbin Park Cemetery, the Quabbin Reservoir release works at Winsor Dam, the Ware River Intake Works at Coldbrook, Quabbin Aqueduct and Hultman Aqueduct.

Daily rainfall and temperature records and continuous records of the flow of the Ware River were kept at the Intake Building at Barre, and daily rainfall records at Pelham, at Nichewaug and Harvard Forest in Petersham, at South New Salem, at North New Salem, at West Rutland and at the Quabbin Aqueduct Intake in Hardwick. Daily rainfall and temperature records were kept at the Administration Building at Belchertown. Continuous records were kept of the flow of the Swift River at Winsor Dam. The accompanying table shows the monthly rainfall during the calendar year 1946 at stations on the Ware and Swift watersheds. Work was continued in the field offices on record plans in the Reservoir Area and along the Hultman Aqueduct.

The Department of Public Health continued its cooperation in the analysis of samples of water.

Quabbin Hill Building and the scenic highway between Winsor Dam and Quabbin Dike and the Quabbin Hill Observation Tower were reopened to the public July 15, 1945, following the expiration of the war emergency. The area was again closed for the winter season December 29 and reopened March 16.

The Belchertown office continued its records and management of the affairs of the former towns of Dana, Enfield, Greenwich and Prescott. Policing of the Quabbin Reservoir area was continued by the Metropolitan Police who were housed in the Administration Building. Miscellaneous surveys included the location of power lines for the new residences and for the United States Army target controls. The work of constructing two new residences for engineering personnel on Blue Meadow Road was continued with lumber and other materials salvaged from various buildings in the reservoir area. To obtain a suitable water supply, a well was drilled by the Wachusett Artesian Well Company, October 6 to October 9, 1945. The well was drilled to a depth of 170 feet and produced a yield of four gallons per minute. Residence No. 1 was completed and occupied November 6. An average of 5 men were employed April 23 to June 10, in order to complete the grading and loaming around the Quabbin Hill Observation Tower. Other miscellaneous items of construction were completed by force account, including the entrances to the east access road, the surfacing with asphalt emulsion of the access roads to the East and Middle Branch Regulating Dams and other access roads totaling 7.3 miles, and the construction of a temporary measuring weir in the lower spillway channel.

Investigations were made of the water supply systems of towns in the Chicopee River Valley in connection with studies for the Special Legislative Commission investigating their needs.

After the reservoir filled to the level of the lower spillway crest, many tests were made to determine the rating of the flow through the stop-log bays in the depressed section of the Winsor Dam Spillway.

Plans and studies were continued by the Coldbrook office of methods for disposing sewage in the towns of Boylston and West Boylston in the Wachusett watershed. Monthly inspections and reports were continued of conditions found at all shaft heads along the Quabbin Aqueduct. The chlorinating station on Mill Brook below the Central New England Sanatorium was maintained.

The Newton Office completed a topographic survey of the proposed distributing reservoir in the Blue Hills area, and a profile along the proposed connecting pipe line was made. Wash borings and soundings were made by force account to investigate subsoil conditions for the proposed Assabet Siphon on the Wachusett Aqueduct. Sewage level gages were continued on the South Metropolitan Sewer at the Fens Gatehouse of the Boston Marginal Conduit, and at the Charles River Dam chamber of the Cambridge Marginal Conduit.

Inspections were made of conditions along the Stony Brook Conduit permitting the entrance of debris into the conduit. Surveys were made of the Galen Street siphon of the Town of Watertown to determine the extent of clogging resulting in abnormal overflows of sewage into the basin. Extensive surveys were made in the valley of Alewife Brook to determine the location of existing sewers and connections and other underground structures, and the extent and character of contributions from sewage and storm water from various sources.

Reforestation. The general program of reforestation was continued with stock from the Commission's nurseries, as indicated in the following table which is a continuation of the information published in previous reports.

Quabbin Watershed.

Nursery Work in 1946	April 10 to May 16
Average Force	2 men
Broad Planting in 1946	April 10 to May 2
Average Force	5 men
Acres Planted	80
Cost per M for planting	\$8.45
Survival to Date	75%
Red Pine, 6-year transplants	500
Hemlock, 5-year transplants	70,700

No planting was done in the Ware watershed. 10,000 red pine 6-year transplants together with a small number of miscellaneous trees and shrubs were taken to Norumbega Reservoir and used to replace trees that had been destroyed by fire. Also approximately 44,000 transplants were transferred to the Water Division of the Metropolitan District Commission or sold to individuals. The summary of stock in the nursery on June 30, 1946, in addition to about 280 miscellaneous trees and shrubs, is as follows:

Six-year seedlings	(6-0)	1,900,000
Seven-year seedlings	(7-0)	1,900,000
Eight-year seedlings	(8-0)	5,000
Six-year transplants	(3-3)	250
Seven-year transplants	(2-5)	675,000
Eight-year transplants	(2-6)	2,900,000
Total		7,380,250

Practically all of these trees are now too large for economical use for watershed planting, and will be left to grow in their present locations and considered as permanent stands.

The work on gypsy moth control by roadside spraying on the Prescott Peninsula with arsenate of lead solution was continued until July 13, 1945. Work was started on April 29 on white pine blister rust control in cooperation with the United States Department of Agriculture and continued throughout the year covering an area of approximately 14,000 acres. An average of 4 men were so employed on force account for 10 weeks.

Floating Equipment.—The use of the Commission's two largest boats, the "Enfield" and the "Greenwich", was continued for the transportation of workmen and their equipment to various sections of the reservoir for taking water samples and general utility work. The "Dana" remained in storage. The New England Power Company was permitted to house and use a boat to facilitate the maintenance of its 110,000-volt transmission line crossing the reservoir.

Experimental Grazing.—The flock of sheep pastured on experimental grazing areas increased during the year from 50 to 66. The Commission's experiment with this flock during the last six years had definitely indicated no economy in its maintenance. Accordingly on June 24, the entire flock was disposed of by sale to the Gardner State Hospital. 320 pounds of wool was sheared during the year.

Fire Protection.—Fire fighting equipment was maintained and ready for service at all times, one fire truck being stationed at Pelham Hill on the west side of the reservoir, one at Nichewaug near the reservoir intake to Quabbin Aqueduct, one near the Ware River Intake Works, and the remainder of the fire fighting equipment at the Administration Buildings. During the year the equipment and personnel responded to calls for assistance at three forest fires in the Quabbin area which burned over only 1 acre above the flow line and ¼ acre below, and three forest fires in the Ware watershed which burned over a total area of 14 acres. The United States Army continued its fire boat and fire fighting equipment at the bombing range base and rendered effective aid. Work on fire access roads and reclearing fire stops was continued by force account. An average of 8 were so employed for 32 weeks.

Quabbin Park Cemetery.—A small labor force averaging 5 men was employed on cemetery work throughout the year. The vault was maintained ready for use, cemetery lots graded and seeded as required, the entire cemetery area properly maintained and driveways plowed and kept clear of snow throughout the winter months. Thirty-one interments were made during the year.

Rutland-Holden Sewer

The Rutland-Holden Sewer was in continuous operation throughout the year. The entire length of the line and the meter stations at the Rutland State Sanatorium, at the United States Veterans' Hospital in Rutland, at the Rutland-Holden boundary line and at the Holden-Worcester boundary line were inspected regularly.

The Rutland sewer system which was constructed under the Commission's agreement with the town in cooperation with the Federal Works Progress Administration was accepted by the town September 17, 1945.

Laboratories

Park Road Laboratory—Weston.—The Commission's laboratory for soil testing was continued with equipment previously moved from Belchertown to Weston. In the same building the analyzing of sewage samples was continued. This included the periodic testing throughout the year of composite 24-hour samples from the South Metropolitan Sewer at Nut Island, also the periodic testing of samples from Alewife Brook and from the Stony Brook Conduit.

Water Analysis Laboratory—Belchertown.—The taking and analyzing of samples from the Ware, Swift, Quaboag and Chicopee rivers was continued. The chemical and bacteriological analysis of the regularly scheduled samples from Quabbin Reservoir and tributary streams in the Swift and Ware watersheds was continued. The work has been under the general supervision of Clarence H. Reed, Assistant Superintendent of the Sudbury Section of the Metropolitan District Commission.

Operation of Winsor Dam Outlet Works

The outlet works were maintained, and pending the completion of repairs to the control valves the required release of water was controlled over stop shutters in the intake building until the filling of the reservoir provided sufficient head over the main dam spillway to transfer the release to that point. Studies of the best method of repairing cavitation particularly in the large 48" valve, which had served its purpose of carrying the entire flow of the river during and immediately following the construction of the Winsor Dam diversion tunnel plug under Contract 52, indicated it was unduly expensive to substitute a smaller valve and to purchase special castings required to make the necessary alterations. Accordingly, satisfactory repairs were made by force account. Pending the completion of the waterwheel installation, which had been delayed on account of the war, the heating of the building was continued by the use of the hot air furnace previously transferred from the Quabbin Park Cemetery building. On August 31, 1945, an inspection was made of the accessible portion of the tunnel under the west dam abutment originally used for river diversion during construction.

Operation of Quabbin Aqueduct

The Reservoir intake works at Shaft 12 of Quabbin Aqueduct, the Ware River intake works at Shaft 8, and the outlet works at Shafts 1 and 11A were kept ready for operation with the fine racks in place at Shafts 12 and 8, and with an auxiliary rack on the invert at the bottom of the tunnel at Shaft 9.

The Coldbrook office constructed by force account between September 12 and October 11, 1945, the catwalk on the south and east sides of the Ware River Intake Building to make it easier to clean, during operation, the coarse outer racks on the siphon spillway intakes. Also repairs were made July 24 to October 30, 1945, on the trunion bearings of the main 72" Dow-disc valve. The work consisted of dismantling the valve, removing the trunion shaft and bearings, turning down and metal spraying the ends of the trunion, and installing new bushings keyed to the housing.

The heating system in the Intake Building was changed from coal back to oil in October 1945. The tunnel was entered and inspected between Shaft 12 and Shaft 4 on October 16, 17 and 18, 1945. The tunnel lining was found to be in very good condition.

Operation of Hultman Aqueduct

The discharge of water directly from Wachusett Reservoir through the new Hultman Pressure Aqueduct and through the 7-foot diameter bypass into the Weston Aqueduct supply mains was continued throughout the year. The Hultman Aqueduct intake works in Marlboro, the control works at Shaft 4 below the Sudbury Dam, and the Norumbega Reservoir gatehouse and emergency chlorinating plant were maintained with the fine racks in place at the intake, and fine screens in the Norumbega gatehouse.

Progress of Construction Contracts

Contract 134.—Contract 134, for making wash and core borings in the Counties of Middlesex, Norfolk and Suffolk was started July 30, 1945. To obtain additional information at the City Tunnel shaft sites, 862 feet of core borings were made; at the site of the proposed Blue Hills Reservoir, 265 feet of core borings; and at the District's Waban Hill Reservoir, 341 feet of wash borings. All the work was completed December 13, 1945.

The Final Estimate, dated January 24, 1946, was for \$8,275.17. The Contractor's force varied from 2 to 4 men.

Contract 136.—Contract 136, for earthwork consisting of excavation and fill at the site of the Nut Island Sewage Treatment Plant in the City of Quincy, was started October 30, 1945, and continued throughout the year. The placing of Class B embankment was started November 19 with material hauled from gravel pits in Weymouth and Quincy. Placing of fill was started at the southeasterly end of the present causeway leading to the Nut Island screen house. As the fill progressed out into the harbor area, the accumulated mud wave in front of it was blasted with light charges to aid its removal. Placing of Class A embankment was started March 19 with suitable heavy material from the required excavations on Nut Island and from the south shore borrow pits. Excavation for the proposed digested sludge tanks and plant buildings was started the latter part of March and was substantially completed by the end of the year. Removal of riprap along the east side of the causeway was started March 13, and practically completed at the end of the year. This material was placed as riprap on the outer face of the new fill, starting April first. Additional riprap was hauled from quarries in Quincy. The work of preparing the site was about 60% completed at the end of the fiscal year. The existing water mains serving the Nut Island screen house and the United States Government Plant on Peddocks Island, and the electric lines serving the Houghs Neck pumping station were relocated as required. The new 60" offshore outlet drain was constructed of pre-cast sections and about 60% completed at the end of the year. The Contractor was authorized to construct the foundation for rebuilding Sea Avenue in Houghs Neck as required for a permanent access road. This work was done April 29 to May 9. The entire work of the contract was about 82% completed at the end of the year, on June 30.

The value of work included in contract estimates during the year was \$389,383.42, of which \$350,445.08 has been approved for payment. The Contractor's force averaged about 40 men, the maximum being 114 for the week ending February 23.

The principal items of equipment used were:

- 2 Bulldozers
- 3 1½-Yd. Shovels
- 1 Crane with drag line for clamshell attachment
- 1 Grader
- 1 Tractor with 6-Yd. dump wagon

In addition to maintenance equipment, he used a maximum of 83 trucks for any one week in hauling the fill.

The total work done and materials furnished to date under the principal items of Contract 136 are as follows:

5,250	cubic yards	of existing stonework protection removed
37,719	"	" of excavation
246,222	"	" of embankment
2,552	"	" of crushed stone and screened gravel
11,642	"	" of sand or gravel
10,207	"	" of riprap

Contract 138.—Contract 138, for soundings on the location of the sludge disposal line from Nut Island to President Roads was started November 26, 1945, and completed March 1. From the floating equipment 154 soundings were made for an aggregate depth of 1477 feet. In addition, 11 wash borings were made for an aggregate depth of 153 feet. The Final Estimate, dated March 11, 1946, was for \$15,488.95. The Contractor's force averaged 4 men.

The Contractor used a 50-foot boat with an A-frame on a platform on the stern for his borings and soundings on water.

Contract 147.—Contract 147, for surfacing Sea Avenue and Island Avenue in the City of Quincy, as permanent access roads to the Nut Island Sewage Treatment Plant was started May 25, and continued throughout the year. Work on Sea Avenue consisted of fine grading and rolling and of placing the base course of crushed stone, replacing broken cross drains, raising manhole and catch basin covers to grade and surfacing. This was completed during the first week in June. The work on Island Avenue consisted of minor grading and replacing broken drains. Placing of the surfacing was delayed by the necessity of getting approval of abutting owners on this private way. At the close of the year, the work on Island Avenue was about 64% complete.

The value of work included in contract estimates during the year was \$9,830.96, of which \$8,847.86 has been approved for payment. The Contractor's force averaged 11 men with a maximum of 18 for the work on Sea Avenue.

The principal items of equipment used were:

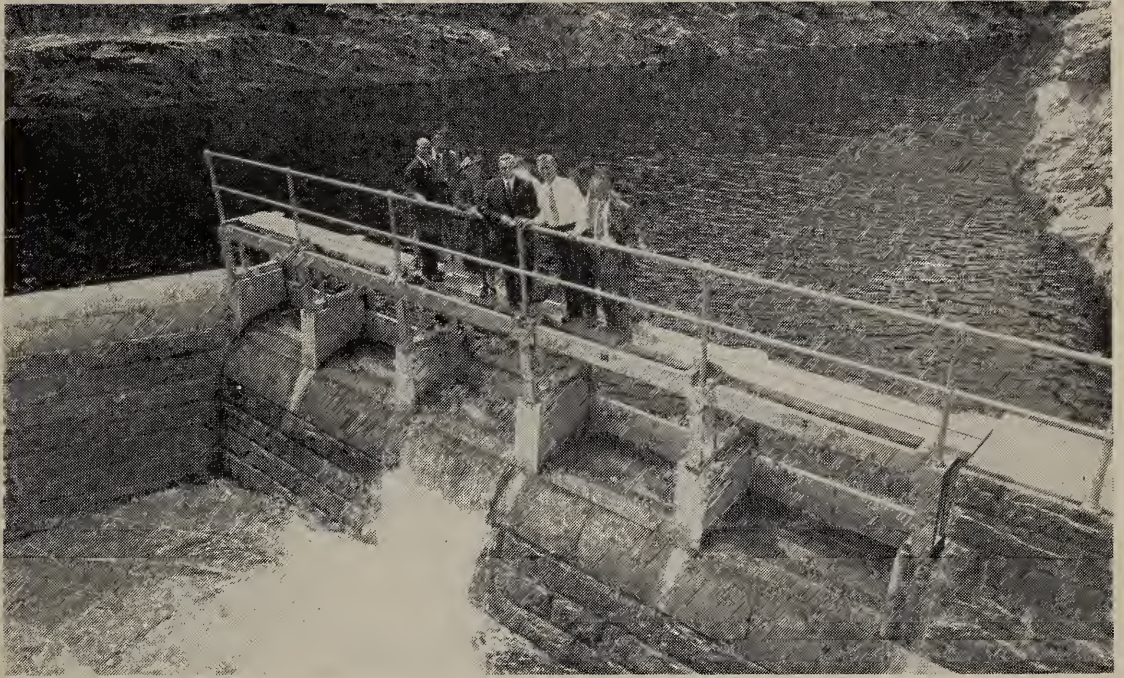
- 1 Bulldozer
- 1 1½-Yd. shovel with ¾-Yd. bucket
- 1 Grader
- 1 Paving machine
- 3 Road rollers up to 16 tons
- 7 Trucks

Contract 150.—Contract 150, for installing the hydro-electric equipment in the Winsor Dam Outlet Works at Belchertown was started March 7, and continued until April 13 when the work was suspended to await the delivery of further equipment furnished under Contract 149. Miscellaneous alterations in existing piping and masonry were 40% completed. Work on the outdoor substation and appurtenances at the rear of the building was about 30% completed, also conduits were installed between the substation and the main building. Work on the erection of the 22,000-volt transmission line was commenced with the clearing of the right-of-way to the New England Power Company's existing line, and was about 20% completed. The entire work was about 13% completed.

The value of work included in contract estimates during the year was \$5,286.00, of which \$4,757.40 has been approved for payment. The Contractor's force averaged about 5 men for 5 weeks.

Filling of Quabbin Reservoir

The water level in Quabbin Reservoir reached, on May 31, Elevation 528 above Boston City Base, the elevation of the masonry crest of the depressed section of the Winsor Dam Spillway. On June 22nd, it had reached Elevation 529.05 giving sufficient head to permit the celebration of the filling of the reservoir by the lifting of the stop logs, and the discharge of the first water through the spillway channel to the Swift River below the Dam. Several hundred people attended the celebration. In the forenoon a large group of the Commission's employees and their friends inspected the works, and enjoyed a picnic lunch in the parking area on Quabbin Hill near the Observation Tower.



First Water over Quabbin Reservoir Winsor Dam Spillway, June 22, 1946.



At 2:30 P.M. the stop logs were lifted by Associate Commission Louis B. Connors. Judge Davis B. Keniston, Chairman of the Commission from its inception, May 28, 1926, to December 27, 1934, and Mrs. Frank E. Winsor, widow of the late Chief Engineer, after whom the dam was named, were also present. A sufficient number of logs were removed from the five six-foot bays to permit a discharge at the rate of fifty million gallons daily. A temporary measuring weir of this capacity had previously been constructed in the channel entering the river for the purpose of measuring the discharge, and obtaining an accurate rating curve for low rates of discharge over the spillway. The visitors spent the afternoon in viewing the reservoir from various vantage points along the scenic highway, and particularly the new and beautiful waterfall created by a plunge from the upper to the lower levels of the spillway channel against the background of the 41-foot masonry arch span which carries the highway across the channel.

Storage and Flow Records

Quabbin Reservoir Storage and Release. Storage in Quabbin Reservoir continued. The following is a continuation of the information tabulated in previous reports, and include fluctuations during the entire calendar year 1946. The figures for storage show the quantity above the sill of the lower intake in Quabbin Aqueduct, Elevation 528.00. Below this sill and hence not available for draft to Wachusett Reservoir, there are about 10,000 million gallons above the reservoir bottom.

ELEVATION ON DECEMBER 31, 1946:

Behind Middle Branch Regulating Dam	530.08
Behind East Branch Regulating Dam	530.21
Main Reservoir	528.58

INTERMEDIATE PEAKS DURING 1946:

High Point on July 3	529.46
Low Point on July 20	529.30
High Point on August 19	529.83
Low Point on September 24	528.44
High Point on October 8	528.63
Low Point on December 20	528.34

MILLION GALLONS AVAILABLE DECEMBER 31, 1946:

Above the ground contours	390,710
Estimated ground storage	14,610
Total	405,320

AT THE END OF THE PREVIOUS FISCAL YEAR JUNE 30, 1945:

Elevation of Main Reservoir	519.92
Total Storage	341,290 M.G.

AT THE END OF THE FISCAL YEAR JUNE 30, 1946:

Elevation of Main Reservoir	529.36
Total Storage	411,600 M.G.

DRAWN TO WACHUSETT RESERVOIR IN 1946:

From	10,745 M.G.
To	August 26
	September 13
	intermittent

RELEASED IN 1946 OVER SPILLWAY AND THROUGH CONTROL WORKS AFTER RESERVOIR REACHED SPILLWAY LEVEL, IN EXCESS OF LEGAL REQUIREMENTS:

June	92 M.G.
July	38 " "
August	72 " "
September	58 " "
October	46 " "
November	37 " "
December	69 " "

Ware River Diversion.—Ware River water was diverted into Quabbin Aqueduct intermittently from November 20, 1945 to June 15, 1946, as shown in the following tabulation which is a continuation, for the entire calendar year 1946, of the information published in previous reports:

Million Gallons Diverted in 1946:

To Quabbin Reservoir	13,383.1 M.G.
To Wachusett Reservoir	169.7 M.G.
Total	13,552.8 M.G.
Maximum in one day	669.2 M.G.
Total in the fiscal year ending June 30, 1946	14,835.0 M.G.
Season Diversion Stopped	June 15

No diversion in 1946, after October 15

Emergency Diversion

No diversion in 1946, June 15 to October 15

Released in 1946, after Quabbin Reservoir reached spillway level, during the diversion period prior to June 15 and after October 15, in excess of legal requirements:

June	934 Mil. Gals.
December	51 " "

Sewage Diversion from Ware River Watershed. The Rutland-Holden Sewer continued in operation. The quantities discharged from the various institutions and towns into the sewerage system of the City of Worcester in the City's fiscal year which coincides with the calendar year, 1946, are as follows:

Rutland State Sanatorium	34,024,000 Gals.
U. S. Veterans Hospital	33,637,000 "
Town of Holden	20,129,000 "
Town of Rutland	5,432,000 "
Total	93,222,000 "

Delivery from Hultman Aqueduct to Distribution System. Pending the extension of Hultman Aqueduct to Chestnut Hill by way of the proposed City Tunnel the limited use of the aqueduct has been continued. The number of gallons delivered to the distribution system monthly during 1946 was as follows:

January	1,895,110,000 Gals.
February	1,957,310,000 "
March	2,022,140,000 "
April	1,947,980,000 "
May	2,031,500,000 "
June	1,923,510,000 "
July	2,136,300,000 "
August	1,992,960,000 "
September	1,956,880,000 "
October	2,058,910,000 "
November	2,050,190,000 "
December	2,235,760,000 "
Total	24,208,550,000 "

The total delivered during the fiscal year ending June 30 was 18,468,390,000 gallons.

List of Drawings and Tables Appended Hereto

Status of Contracts completed during the fiscal year ending June 30, 1946
 Status of Contracts in force on June 30, 1946
 Canvass of Bids, Contract 133
 Canvass of Bids, Contract 136
 Canvass of Bids, Contract 137
 Monthly Rainfall on Ware and Swift Watersheds 1946

For summaries of rainfall in years previous to 1945, see 1935 to 1945 Annual Reports, inclusive.

Respectfully submitted,

20 Somerset Street, Boston, Mass.
 Jan. 1, 1947.

KARL R. KENNISON,
 Chief Engineer.

MONTHLY RAINFALL IN INCHES AT STATIONS ON THE WARE AND SWIFT WATERSHEDS
1946

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
WARE WATERSHED													
Ware River Intake Works*	3.25	3.40	1.90	2.44	5.37	4.97	4.29	4.68	6.54	0.99	1.24	3.07	42.14
West Rutland*	3.39	3.60	1.90	2.52	5.27	4.36	3.74	5.20	7.54	0.96	1.38	3.20	43.06
North Rutland	2.42	2.76	1.10	2.38	5.14	3.32	4.05	4.78	7.17	0.81	1.46	2.88	38.27
Williamsville	2.88	3.53	2.17	2.39	6.01	5.35	4.71	4.56	7.98	1.00	1.13	3.49	45.20
Hubbardston	2.23	3.11	1.75	1.98	5.18	4.11	3.66	4.35	6.37	1.02	1.36	2.33	37.45
1946 Mean	2.83	3.28	1.77	2.34	5.39	4.42	4.09	4.71	7.12	0.96	1.32	2.99	41.22
23-year Mean	3.22	2.81	3.53	3.45	3.57	4.28	4.16	3.63	4.68	3.11	3.61	3.07	43.12
SWIFT WATERSHED													
Administration Building*	3.28	3.66	1.68	2.16	5.75	4.59	4.50	4.70	3.24	0.81	1.03	3.03	38.43
Shutesbury	2.86	3.63	1.55	2.40	7.34	4.29	5.80	5.05	5.79	1.91	1.17	2.61	44.40
Wendell	3.26	4.04	1.42	2.83	7.00	4.22	6.02	4.53	4.71	1.72	0.96	4.12	44.83
Pelham*	2.32	3.60	1.74	2.51	6.87	4.89	4.42	5.06	5.21	1.56	1.12	3.05	42.35
South New Salem*	2.54	3.37	1.98	2.46	6.64	3.50	4.09	4.34	5.15	1.52	0.92	3.47	39.98
North New Salem*	3.13	3.43	1.71	3.08	6.47	4.76	5.15	4.52	5.45	1.61	1.10	3.95	44.36
Harvard Forest, Petersham*	2.97	3.57	1.70	2.39	5.65	7.81	3.96	5.00	4.08	1.10	1.06	3.37	42.66
Nichewaug, Petersham*	2.80	2.97	1.96	2.47	6.18	7.29	3.52	4.02	3.94	0.99	1.43	2.88	40.45
Quabbin Aqued. Intake Wks.*	2.88	3.06	1.97	2.93	6.61	4.14	3.81	4.95	3.96	1.12	1.24	3.57	40.24
1946 Mean	2.89	3.48	1.75	2.58	6.50	5.05	4.59	4.69	4.61	1.37	1.11	3.34	41.96
27-year Mean	3.35	2.82	3.56	3.94	3.75	4.91	4.38	3.87	4.61	3.13	4.09	3.33	45.74

*Station maintained by Metropolitan District Water Supply Commission. Data for stations at North Rutland, Williamsville, Hubbardston, Shutesbury and Wendell furnished by Massachusetts Department of Public Health.

STATUS OF CONTRACTS COMPLETED BETWEEN JUNE 30, 1945 TO JUNE 30, 1946

Contract No.	Description	Contractor	No. of Bids†	Contract Executed	Basis of Award	Final Estimate	Date of Final Estimate
134	Wash & Core Borings in Counties of Middlesex, Norfolk & Suffolk	Sprague & Henwood	2	8/9/45	\$8,492.25	\$8,275.17	1/24/46
138	Soundings—Sludge Disposal Line Nut Island to President Roads	Greenland Drilling Co.	1	11/28/45	\$14,717.50	\$15,488.95	3/11/46

†The above contracts were all awarded to the lowest bidder.

STATUS OF CONTRACTS IN FORCE ON JUNE 30, 1946

Contract No.	Description	Contractor	No. of Bidst	Contract Executed	Basis of Award	Payments To Date
33	Purchase of Power at Shaft 1	New England Power Co.	Date of Agreement	8/6/31	Agreed rates	\$13,437.55
42	Use of Worcester Sewerage SystemCity of Worcester and Treatment Works a/c Rutland-Holden Sewer		Date of Agreement	5/1/33	{ Lump Sum \$325,000 { Annual Charges *	\$325,000.00 \$5,200.45
46	Connections with Rutland-Holden Sewer & Disposal of Sewage from U. S. Veterans Hospital	U. S. Veterans Adm. (Note: Payments under Cont. 46 are Received by M.D.W.S.C.)	Date of Agreement	11/7/34	{ Lump Sum \$37,000 { Annual Charges *	\$37,000.00 \$6,110.60
48	Connection with Rutland-Holden Sewer & Disposal of Sewage from the Rutland State Sanitorium	Rutland State San. (Note: Payments under Cont. 48 are Received by M.D.W.S.C.)		6/5/34	{ Lump Sum \$60,000 { Annual Charges *	\$60,000.00 \$213.39
136	Fill at Nut Island	V. Barletta Co.	8	10/18/45	\$478,814.36	\$389,383.40
141 A & B	Engines, Generators, Blowers and Pumps at Nut Island	Worthington Pump & Machinery Company	5	5/31/46	\$330,374.00	
142 A to H	Grit and Sludge Removal Equipment and Screens	Jeffrey Mfg. Co.	13	3/26/46	\$137,927.00	
142 I	Comminutors	Chicago Pump Co.	1	3/19/46	\$40,244.00	
147	Bituminous surface, Sea & Island Ave., Quincy	V. Barletta Co.	2	6/27/46	\$15,288.81	
148	Sale of Power at Winsor Dam	Nw England Power Co. (Note: Net Payments under Cont. 148 are Received by M.D.W.S.C.)		5/1/45	Agreed Rates	None
149 A	Hydraulic Turbine Outlet Works, Belchertown	S. Morgan Smith Co.	2	6/25/45	\$27,953.00	
149 B	Generator	Electric Machinery Mfg. Co.	3	7/16/45	\$17,192.00	
149 C, E, F	Substation, Switchgear and Storage Battery	General Electric Co.	2	6/5/45	\$15,008.00	
149 D	Transformer	Erie Electric Co.	3	6/5/45	\$4,299.00	
150	Installing Power Plant at Winsor Dam	Berke-Moore Co., Inc.	2	3/27/46	\$39,198.10	

* Proportion of Annual Maintenance Cost.

† The above contracts were all awarded to the lowest bidder.

FINANCIAL STATEMENT OF THE METROPOLITAN DISTRICT WATER SUPPLY COMMISSION

EXPENDITURES AND DISBURSEMENTS FOR THE FISCAL YEAR, AND FROM
JULY 28, 1926, THE DATE OF THE APPOINTMENT OF THE COMMISSION
ON ACCOUNT OF METROPOLITAN WATER SUPPLY
CONSTRUCTION FUND

GENERAL OVERHEAD

ADMINISTRATION, <i>Commissioners' Office</i> :	Year Ending June 30, 1946	Total to June 30, 1946
Total Except the Following Listed Items	\$0.00	\$16,092.84
Salaries, Commissioners	5,631.24	203,961.54
Salaries, Clerical	19,896.92	275,165.90
Rent and Upkeep	2,508.13	45,855.65
Automobile Maintenance	320.74	6,348.01
Miscellaneous Expense (undistributed)	1,994.68	29,448.85
Printing and Blueprinting	110.60	15,008.70
Stationery and Office Supplies	163.63	5,523.12
Advertising	158.25	15,237.42
Postage	152.00	3,672.13
Currently Distributed Overhead	0.00	15,953.54
Total Administration, Commissioners' Office	\$30,936.19	\$632,267.70
 ENGINEERING, <i>Headquarters Office</i> :		
Total Except the Following Listed Items	\$0.00	\$72,414.21
Salaries, Engineering	22,936.42	1,279,975.09
Salaries, Clerical	11,703.43	253,702.72
Salaries, Engineering, Pension	1,470.00	7,962.50
General Consultant Expense	120.57	123,486.84
Furniture and Fixtures	2.06	16,031.52
Rent and Upkeep	6,291.33	189,100.52
Automobile Maintenance	339.74	7,029.62
Miscellaneous Expense (undistributed)	401.02	27,816.97
Printing and Blueprinting	182.47	20,417.11
Stationery and Office Supplies	325.08	9,892.89
Postage	181.05	4,893.58
Currently Distributed Overhead	0.00	261,166.97
Total Engineering, Headquarters Office	\$43,953.17	\$2,273,890.54
TOTAL GENERAL OVERHEAD	\$74,889.36	\$2,906,158.24

DISTRIBUTION OF GENERAL OVERHEAD

ADMINISTRATION, <i>Commissioners' Office</i> :		
Ware Supply, including Wachusett-Coldbrook Tunnel Section of Quabbin Aqueduct (except PWA)	\$5,630.38	\$130,455.77
Ware Supply, including Wachusett-Coldbrook Tunnel Section (PWA)	0.00	129.21
Coldbrook-Swift Tunnel Section of Quabbin Aqueduct (except PWA)	24.75	31,536.46
Coldbrook-Swift Tunnel Section of Quabbin Aqueduct (PWA)	0.00	173.20
Quabbin Reservoir (PWA)	0.00	1,589.11
Quabbin Reservoir (except PWA)	16,798.35	294,041.89
Winsor Dam (except PWA)	3,622.63	79,674.18
Winsor Dam (PWA)	0.00	193.84
Quabbin Dike	160.87	30,357.31
Special Investigations	0.00	4,298.45
Southern Sudbury Emergency Supply	0.00	8,690.28
Wachusett Watershed Protection and Elimination of Pollution (except PWA)	349.58	16,048.72
Weston Aqueduct Siphons (PWA)	0.00	423.11
Hultman Aqueduct (Supply Section) (PWA)	0.00	6,771.17
Hultman Aqueduct (Supply Section) (except PWA)	1,014.71	5,696.68
Hultman Aqueduct (Distribution Section) (PWA)	0.00	5,976.56
Hultman Aqueduct (Distribution Section) (except PWA)	3,334.92	15,611.42
Spot Pond By-Pass (PWA)	0.00	430.30
Enlargement of Fells Reservoir (PWA)	0.00	170.04
Total Administration, Commissioners' Office	\$30,936.19	\$632,267.70

ENGINEERING, Headquarters Office:

	Year Ending June 30, 1946	Total to June 30, 1946
Ware Supply, including Wachusett-Coldbrook Tunnel Section of Quabbin Aqueduct (except PWA)	\$7,999.48	\$439,880.48
Ware Supply, including Wachusett-Coldbrook Tunnel Section (PWA)	0.00	1,622.20
Coldbrook-Swift Tunnel Section of Quabbin Aqueduct (except PWA)	35.16	118,186.93
Coldbrook-Swift Tunnel Section of Quabbin Aqueduct (PWA)	0.00	292.03
Quabbin Reservoir (PWA)	0.00	16,854.90
Quabbin Reservoir (except PWA)	23,866.57	969,614.81
Winsor Dam (except PWA)	5,146.92	236,470.69
Winsor Dam (PWA)	0.00	6,333.58
Quabbin Diike	228.56	111,584.71
Special Investigations	0.00	19,863.79
Southern Sudbury Emergency Supply	0.00	33,407.97
Wachusett Watershed Protection and Elimination of Pollution (except PWA)	496.67	43,778.75
Wachusett Watershed Protection (PWA)	0.00	450.95
Weston Aqueduct Siphons (PWA)	0.00	5,722.73
Hultman Aqueduct (Supply Section) (PWA)	0.00	114,472.88
Hultman Aqueduct (Supply Section) (except PWA)	1,441.66	16,139.78
Hultman Aqueduct (Distribution Section) (PWA)	0.00	72,793.01
Hultman Aqueduct (Distribution Section) (except PWA)	4,738.15	45,909.75
Spot Pond By-Pass (PWA)	0.00	13,611.66
Enlargement of Fells Reservoir (PWA)	0.00	6,898.94
Total Engineering, Headquarters Office	\$43,953.17	\$2,273,890.54

WARE SUPPLY (EXCEPT PWA)

GENERAL OVERHEAD:

Administration, Commissioners' Office	\$5,630.38	\$130,455.77
Engineering, Headquarters Office	7,999.48	439,880.48
TOTAL GENERAL OVERHEAD	\$13,629.86	\$570,336.25

ENGINEERING:

Total Except the Following Listed Items	\$0.00	\$41,344.64
Salaries, Engineering and Clerical	513.30	434,153.60
Consultant Expense	515.67	11,459.95
Labor	555.55	9,856.91
Miscellaneous Expense (undistributed)	10.09	11,672.07
Printing and Blueprinting	7.11	1,339.76
Stationery and Office Supplies	1.18	3,332.87
Postage	1.00	526.61
Automobile Maintenance	42.73	19,836.04
Rent and Upkeep	5.00	24,006.34
Tools and Equipment	3.82	671.74
Total Engineering	\$1,655.45	\$558,200.53

REAL ESTATE—GENERAL CONSTRUCTION:

Total Except Special Agents	\$0.00	\$155,484.33
Special Agents, Salaries, Engineering	619.50	17,601.49
Total Real Estate	\$619.50	\$173,085.82

WARE WATERSHED:

Total Except the Following Listed Items	\$0.00	\$335,766.84
Salaries, Engineering and Clerical	4,287.81	201,495.34
Legal and Expert Expense	1,028.70	42,898.41
Consultant Expense	236.10	1,228.01
Labor	3,731.25	89,844.24
Automobile Maintenance	246.78	15,410.48
Miscellaneous Expense (undistributed)	7.39	8,766.94
Printing and Blueprinting	23.72	1,179.15
Stationery and Office Supplies	3.52	968.51
Postage	5.00	209.82
Maintenance of Real Estate	1,322.55	14,231.99
Engineering Instruments	11.02	463.19
Medical and Surgical Services	9.00	204.66
Rent and Upkeep	4.17	1,421.65
Purchases and Settlements (including Certificate of Judgment)	9,828.09	1,698,908.28
Taxes	19,159.37	153,664.90
Total Ware Watershed	\$39,904.47	\$2,566,662.41

	Year Ending June 30, 1946	Total to June 30, 1946
WARE DIVERSION DAMAGES:	\$0.00	\$1,429,557.92
PERMANENT CONSTRUCTION—CONSTRUCTION CONTRACTS: . . .	\$0.00	\$9,643,641.87
PERMANENT CONSTRUCTION—EXCEPT CONSTRUCTION CONTRACTS:		
Total except Labor and Materials of Construction . . .	0.00	187,117.51
Labor	122.50	10,284.29
Materials of Construction	324.42	1,073.73
Sub Total Except Construction Contracts	\$446.92	\$198,475.53
Total Permanent Construction	\$446.92	\$9,842,117.40
Total Ware Supply, including Wachusett-Coldbrook Tunnel Section of Quabbin Aqueduct (except PWA)	\$56,256.20	\$15,139,960.33
WACHUSETT-COLDBROOK TUNNEL SECTION OF QUABBIN AQUE- DUCT (PWA ONLY)	\$0.00	\$107,531.91
TOTAL WARE SUPPLY, INCLUDING WACHUSETT-COLD- BROOK TUNNEL SECTION OF QUABBIN AQUEDUCT	\$56,256.20	\$15,247,492.24
COLDBROOK-SWIFT TUNNEL SECTION OF QUABBIN AQUEDUCT (EXCEPT PWA)		
GENERAL OVERHEAD:		
Administration, Commissioners' Office	\$24.75	\$31,536.46
Engineering, Headquarters Office	35.16	118,186.93
Total General Overhead	\$59.91	\$149,723.39
ENGINEERING:		
Total Except the Following Listed Items	\$0.00	\$353,946.06
Installed Equipment	8.59	324.00
Labor	184.80	5,318.00
Total Engineering	\$193.39	\$359,588.06
REAL ESTATE—GENERAL CONSTRUCTION:	\$0.00	\$27,876.13
COLDBROOK-SWIFT DAMAGES:	\$0.00	\$8,668.18
PERMANENT CONSTRUCTION:	\$0.00	\$4,874,523.66
Total Coldbrook-Swift Tunnel Section (Except PWA) . .	\$253.30	\$5,420,379.42
COLDBROOK-SWIFT TUNNEL SECTION OF QUABBIN AQUE- DUCT (PWA ONLY)	\$0.00	\$2,305.44
TOTAL COLDBROOK-SWIFT TUNNEL SECTION OF QUABBIN AQUEDUCT	\$253.30	\$5,422,684.86
QUABBIN RESERVOIR (PWA ONLY)	\$0.00	\$2,086,051.39

QUABBIN RESERVOIR NOT INCLUDING WINSOR DAM AND QUABBIN DIKE (EXCEPT PWA)

GENERAL OVERHEAD:

Administration, Commissioners' Office	\$16,798.35	\$294,041.89
Engineering, Headquarters Office	23,866.57	969,614.81
Total General Overhead	\$40,664.92	\$1,263,656.70

ENGINEERING:

Total Except the Following Listed Items	\$0.00	\$95,889.89
Salaries, Engineering and Clerical	17,839.18	787,452.30
Consultant Expense	1,547.00	13,557.14
Labor	11,690.28	134,900.77
Tools and Equipment	31.98	3,510.41
Rent and Upkeep	47.66	45,713.67
Medical and Surgical Services	53.00	407.00
Automobile Maintenance	1,206.60	62,635.34
Miscellaneous Expense (undistributed)	2,561.13	24,728.76
Printing and Blueprinting	67.19	4,147.31
Stationery and Office Supplies	17.98	10,549.26
Postage	41.05	2,958.39
Labor on Automobiles and Mechanical Equipment	1,194.76	4,971.47
Maintenance of Mechanical Equipment	27.68	3,905.08
Maintenance of Grounds	32.00	4,677.65
Total Engineering	\$36,357.49	\$1,200,004.44

	Year Ending June 30, 1946	Total to June 30, 1946
REAL ESTATE—EXCEPT AWARDS BY COURT DECREE:		
Total Except the Following Listed Items	\$0.00	\$821,747.91
Legal and Expert Expense	433.08	193,612.43
Labor	799.07	32,705.77
Miscellaneous Expense (undistributed)	1,113.14	11,970.46
Printing and Blueprinting	3.67	1,835.62
Maintenance of Real Estate	110.93	18,542.54
Purchases and Settlements	2,417.00	7,321,978.77
Taxes	16,080.53	591,285.53
Labor on Automobiles and Mechanical Equipment	36.00	2,819.37
Fire Protection—Labor	33.00	78,937.24
Special Agents—Salaries	148.00	35,956.09
Sub Total Real Estate—Except Awards by Court Degree	\$21,174.42	\$9,111,391.73
REAL ESTATE—AWARDS BY COURT DECREE—BOARD OF REFEREES:	\$0.00	\$317,875.42
REAL ESTATE—AWARDS BY COURT DECREE—JURY VERDICTS:		
Total Except the Following Listed Items	\$0.00	\$84,638.87
Legal Expenses	229.50	4,661.38
Payments under Certificates of Judgment	3,561.64	95,992.47
Sub Total Real Estate—Jury Verdicts	\$3,791.14	\$185,292.72
Total Real Estate	\$24,965.56	\$9,614,559.87
QUABBIN RESERVOIR DAMAGES:	\$0.00	\$82,779.78
SWIFT DIVERSION DAMAGES (INCLUDING BEAVER BROOK) EXCEPT AWARDS BY COURT DECREE AND PAYMENTS TO COUNTIES:		
Total Except the Following Listed Items	\$0.00	\$1,353,244.68
Salaries, Engineering and Clerical	2,457.47	140,532.51
Labor	733.12	19,525.89
Automobile Maintenance	2.00	5,258.51
Medical and Surgical Services	28.00	62.50
Sub Total Swift Diversion Damages—Except Awards by Court Decree	\$3,220.59	\$1,518,624.09
SWIFT DIVERSION DAMAGES (INCLUDING BEAVER BROOK) AWARDS BY COURT DECREE—JURY VERDICTS:		
Total Except Legal Expense	\$0.00	\$325,267.70
Legal Expense	14,865.58	49,056.93
Sub Total Swift Diversion Damages—Awards by Court Decree—Jury Verdicts	\$14,865.58	\$374,324.63
SWIFT DIVERSION DAMAGES—PAYMENTS TO COUNTIES FOR REIMBURSEMENT AND EXPENSES OF LITIGATION IN COUNTY COURTS:		
Total Swift Diversion Damages (Including Beaver Brook)	\$18,086.17	\$1,897,255.77
QUABBIN RESERVOIR—LIQUIDATION OF TOWNS:		
TOWN OBLIGATIONS:		
Town of Enfield	\$566.40	\$33,431.39
Town of Greenwich	716.85	14,071.18
Town of Prescott	24.19	5,886.28
Town of Dana	2,143.87	36,803.23
Sub Total Town Obligations	\$3,451.31	\$90,192.08
QUABBIN RESERVOIR—LIQUIDATION OF TOWNS:		
LIQUIDATING EXPENSES:	\$1,249.20	\$20,158.85
Total Quabbin Reservoir—Liquidation of Towns	\$4,700.51	\$110,350.93
QUABBIN RESERVOIR CEMETERIES (EXCEPT PWA):	\$0.00	\$265,762.32
PERMANENT CONSTRUCTION—CONSTRUCTION CONTRACTS:	\$0.00	\$785,263.49
PERMANENT CONSTRUCTION—AWARDS BY COURT DECREE—ACTIONS FOR BREACH OF CONTRACT:	\$0.00	\$22,316.54
OTHER PERMANENT CONSTRUCTION—EXCEPT CLEARING	\$0.00	\$16,458.83
OTHER PERMANENT CONSTRUCTION—1936 CLEARING PROJECT:		
Compensation Payments to Employees Injured on Work	\$629.14	\$47,158.25
All Other Items	0.00	1,794,652.10
Sub Total 1936 Clearing Project	\$629.14	\$1,841,810.35

	Year Ending June 30, 1946	Total to June 30, 1946
OTHER PERMANENT CONSTRUCTION—WPA CLEARING PROJECT: .	\$0.00	\$3,387.76
OTHER PERMANENT CONSTRUCTION—RESERVOIR CLEARING NOT INCLUDING 1936 CLEARING PROJECT OR WPA CLEARING PROJECT:		
Total Except the Following Listed Items	\$0.00	\$1,816.05
Salaries, Engineering	1,670.55	9,378.82
Labor	36,715.65	255,680.82
Compensation Payments to Employees Injured on Work	138.29	778.06
Tools and Equipment	92.47	880.86
Medical and Surgical Services	38.50	664.75
Sub Total Reservoir Clearing, Not Including 1936 Clear- ing Project or WPA	\$38,655.46	\$269,199.36
Total Quabbin Reservoir Permanent Construction	\$39,284.60	\$2,938,436.33
HIGHWAY AND PUBLIC UTILITY RELOCATION:	\$0.00	\$1,389,807.47
QUABBIN RESERVOIR WATERSHED—REFORESTATION NURSERIES:		
Total Except the Following Listed Items	\$0.00	\$16,296.20
Salaries, Engineering and Clerical	131.70	9,096.58
Labor	290.10	110,622.55
Sub Total Reforestation—Nurseries	\$421.80	\$136,015.33
QUABBIN RESERVOIR WATERSHED—REFORESTATION WATERSHED PLANTING:		
Total Except the Following Listed Items	\$0.00	\$4,278.72
Salaries, Engineering and Clerical	393.40	7,454.54
Labor	691.65	102,179.41
Medical and Surgical Services	3.00	532.90
Sub Total Reforestation—Watershed Planting	\$1,088.05	\$114,445.57
QUABBIN RESERVOIR WATERSHED—REFORESTATION: FIRE STOPS AND FIRE ACCESS ROADS:		
Labor	\$1,996.41	\$63,736.26
All Other Items	0.00	20,125.32
Sub Total Reforestation Fire Stops and Fire Access Roads	\$1,996.41	\$83,861.58
QUABBIN RESERVOIR WATERSHED—FENCING OF WATERSHED PROPERTY:		
Labor	\$29.55	\$4,358.90
All Other Items	0.00	2,176.28
Sub Total Fencing of Watershed Property	\$29.55	\$6,535.18
QUABBIN RESERVOIR WATERSHED—OTHER FORESTRY AND HUR- RICANE CLEARING:		
Labor	\$240.00	\$42,203.28
All Other Items	0.00	9,321.78
Sub Total Other Forestry and Hurricane Clearing	\$240.00	\$51,525.06
QUABBIN RESERVOIR WATERSHED—PATROL EQUIPMENT:	\$0.00	\$6,773.99
Total Quabbin Reservoir Watershed	\$3,775.81	\$399,156.71
Total Quabbin Reservoir, not Including Winsor Dam and Quabbin Dike (Except PWA)	\$167,835.06	\$19,161,770.32
TOTAL QUABBIN RESERVOIR, NOT INCLUDING WINSOR DAM AND QUABBIN DIKE	\$167,835.06	\$21,247,821.71
WINSOR DAM (EXCEPT PWA)		
GENERAL OVERHEAD:		
Administration, Commissioners' Office	\$3,622.63	\$79,674.18
Engineering, Headquarters Office	5,146.92	236,470.69
Total General Overhead	\$8,769.55	\$316,144.87
ENGINEERING:		
Total Except the Following Listed Items	\$0.00	\$86,712.35
Salaries, Engineering and Clerical	570.17	388,335.11
Consultant Expense	10.57	6,879.07
Labor	521.60	68,984.63
Medical and Surgical Services	62.00	197.00
Miscellaneous Expense (undistributed)	8.56	13,940.32
Printing and Blueprinting	52.08	2,603.92
Total Engineering	\$1,224.98	\$567,652.40

	Year Ending June 30, 1946	Total to June 30, 1946
PERMANENT CONSTRUCTION—CONSTRUCTION CONTRACTS:		
Completed Contracts	\$0.00	\$2,416,131.40
Contract 52, Embankment, Winsor Dam	15,569.19	2,442,495.37
Contract 149, Group C, Switchgear and Appurtenances	2,777.40	2,777.40
Contract 149, Group D, Transformer	3,095.28	3,095.28
Contract 150, Installation of above and Construction of Power Line at and Near Winsor Dam	4,757.40	4,757.40
Sub Total Construction Contracts	\$26,199.27	\$4,869,256.85
PERMANENT CONSTRUCTION—EXCEPT CONSTRUCTION CONTRACTS:	\$0.00	\$74,711.05
PERMANENT CONSTRUCTION—AWARDS BY COURT DECREE—ACTION FOR BREACH OF CONTRACT:		
Legal Expense	\$2.50	\$25,299.72
All Other Items	0.00	33,171.78
Sub Total Permanent Construction—Awards	\$2.50	\$58,471.50
Total Permanent Construction	\$26,201.77	\$5,002,439.40
Total Winsor Dam (Except PWA)	\$36,196.30	\$5,886,236.67

WINSOR DAM (PWA ONLY)

	\$0.00	\$61,261.84
TOTAL WINSOR DAM	\$36,196.30	\$5,947,498.51

QUABBIN DIKE

GENERAL OVERHEAD:

Administration, Commissioners' Office	\$160.87	\$30,357.31
Engineering, Headquarters Office	228.56	111,584.71
Total General Overhead	\$389.43	\$141,942.02

ENGINEERING:

Labor	\$228.90	\$42,653.54
All Other Items	0.00	221,350.06
Total Engineering	\$228.90	\$264,003.60

PERMANENT CONSTRUCTION—CONSTRUCTION CONTRACTS:

Completed Contracts	\$0.00	\$1,054,137.90
Contract No. 50, Embankment of Dike	1,000.00	\$1,402,751.98
Sub Total Construction Contracts	\$1,000.00	\$2,456,889.88

PERMANENT CONSTRUCTION—EXCEPT CONSTRUCTION CONTRACTS:

\$0.00 \$23,863.21

PERMANENT CONSTRUCTION—AWARDS BY COURT DECREE—AC-
TION FOR BREACH OF CONTRACT:

\$0.00 \$18,911.94

Total Permanent Construction	\$1,000.00	\$2,499,665.03
TOTAL QUABBIN DIKE	\$1,618.33	\$2,905,610.65

SPECIAL INVESTIGATIONS

Total Expenditure	\$0.00	\$149,609.63
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SOUTHERN SUDBURY EMERGENCY SUPPLY

Total Expenditure	\$0.00	\$638,533.83
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WACHUSETT WATERSHED PROTECTION AND ELIMINATION OF POLLUTION (EXCEPT PWA)

GENERAL OVERHEAD:

Administration, Commissioners' Office	\$349.58	\$16,048.72
Engineering, Headquarters Office	496.67	43,778.75
Total General Overhead	\$846.25	\$59,827.47

	Year Ending June 30, 1946	Total to June 30, 1946
ENGINEERING—EXCEPT WPA PROJECTS:	\$0.00	\$36,037.30
REAL ESTATE:	\$0.00	\$19,330.57
TOWN OF HOLDEN SEWER (WPA SEWER):	\$0.00	\$153,741.94
TOWN OF RUTLAND SEWER (WPA PROJECT):		
Total Except the Following Listed Items	\$0.00	\$37,166.69
Salaries, Engineering and Clerical	378.25	40,320.77
Labor	66.00	32,630.77
Miscellaneous Expense (undistributed)	0.90	25,940.11
Total Town of Rutland Sewer (WPA Project)	\$445.15	\$136,058.34
WEST BOYLSTON SEWER:		
Total Except the Following Listed Items	\$0.00	\$439.37
Salaries, Engineering and Clerical	2,118.75	16,264.55
Labor	67.20	524.55
Rent and Upkeep	7.40	44.65
Automobile Maintenance	5.84	414.46
Total West Boylston Sewer	\$2,199.19	\$17,687.58
Total Wachusett Watershed Protection and Elimination of Pollution (Except PWA)	\$3,490.59	\$422,683.20
WACHUSETT WATERSHED PROTECTION (PWA ONLY)		
TOTAL WACHUSETT WATERSHED PROTECTION	\$0.00	\$450.95
	\$3,490.59	\$423,134.15
WESTON AQUEDUCT SIPHONS (PWA)		
Total Expenditure	\$0.00	\$336,169.80
HULTMAN AQUEDUCT SUPPLY SECTION (PWA)		
Total Except Real Estate	\$0.00	\$9,859,049.18
REAL ESTATE:		
Total Except Taxes	\$0.00	\$224,472.29
Taxes	2,218.56	14,487.52
Total Real Estate	\$2,218.56	\$238,959.81
Total Hultman Aqueduct, Supply Section (PWA)	\$2,218.56	\$10,098,008.99
HULTMAN AQUEDUCT SUPPLY SECTION (EXCEPT PWA)		
GENERAL OVERHEAD:		
Administration, Commissioners' Office	\$1,014.71	\$5,696.68
Engineering Headquarters Office	1,441.66	16,139.78
Total General Overhead	\$2,456.37	\$21,836.46
ENGINEERING:		
Total Except the Following Listed Items	\$0.00	\$1,036.29
Salaries, Engineering and Clerical	4,640.83	46,636.18
Labor	739.44	846.32
Miscellaneous Expense (undistributed)	6.25	21.20
Printing and Blueprinting	28.13	49.88
Automobile Maintenance	17.40	161.69
Legal Expense	39.35	168.82
Total Engineering	\$5,471.40	\$48,920.38
PERMANENT CONSTRUCTION:	\$0.00	\$3,108.61
Total Hultman Aqueduct, Supply Section (Except PWA)	\$7,927.77	\$73,865.45
TOTAL HULTMAN AQUEDUCT, SUPPLY SECTION	\$10,146.33	\$10,171,874.44

HULTMAN AQUEDUCT, DISTRIBUTION SECTION (PWA)

	Year Ending June 30, 1946	Total to June 30, 1946
Total Except Real Estate	\$0.00	\$2,768,410.82
REAL ESTATE:		
Total Except Taxes	\$0.00	\$62,445.54
Taxes	1,169.42	6,888.55
Total Real Estate	\$1,169.42	\$69,334.09
Total Hultman Aqueduct, Distribution Section (PWA)	\$1,169.42	\$2,837,744.91

HULTMAN AQUEDUCT, DISTRIBUTION SECTION (EXCEPT PWA)

GENERAL OVERHEAD:

Administration, Commissioners' Office	\$3,334.92	\$15,611.42
Engineering, Headquarters Office	4,738.15	45,909.75
Total General Overhead	\$8,073.07	\$61,521.17

ENGINEERING:

Total Except the Following Listed Items	\$0.00	\$2,736.31
Salaries, Engineering and Clerical	10,534.03	148,557.98
Legal Expense	2,587.72	5,267.11
Labor	1,960.53	3,062.80
Miscellaneous Expense (undistributed)	188.75	1,153.33
Printing and Blueprinting	33.37	412.56
Stationery and Office Supplies	58.14	501.17
Rent and Upkeep	143.81	1,082.31
Automobile Maintenance	258.85	2,276.94
Tools and Equipment	2.06	148.53
Contracts for Investigations and Surveys	8,275.17	30,338.18
Total Engineering	\$24,042.43	\$195,537.22

PERMANENT CONSTRUCTIONS	\$0.00	\$3,901.73
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Total Hultman Aqueduct, Distribution Section (except PWA)	\$32,115.50	\$260,960.12
TOTAL HULTMAN AQUEDUCT, DISTRIBUTION SECTION	\$33,284.92	\$3,098,705.03

SPOT POND BY-PASS AND IMPROVEMENTS TO PUMPING STATION (PWA)

Total Expenditure	\$0.00	\$218,798.74
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ENLARGING FELLS HIGH-LEVEL DISTRIBUTING RESERVOIR (PWA)

Total Expenditure	\$0.00	\$175,444.61
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DEFERRED CHARGES TO MAINTENANCE—1946 DEFICIENCY

\$5,340.67	\$5,340.67
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SUMMARY

WATER SUPPLY CONSTRUCTION FUND

Total authorized under Chapters 111 and 375, Acts of 1926 and Chapter 321, Acts of 1927	\$65,900,000.00	
Amount reverted from authorization under said Chapter 111	261,466.17	\$65,638,533.83
Received from City of Worcester under said Chapter 375	\$1,000,000.00	
Income Credited to Construction Fund	1,092,692.51	
Serial Bonds issued and matured	20,296,000.00*	
Serial Bonds outstanding June 30, 1946	38,454,000.00	
Balance of Authorization available for issue	4,795,841.32	
	\$65,638,533.83	

Contributions by Federal Government From PWA Funds	\$0.00	\$7,073,003.78
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Total Construction Fund		\$72,711,537.61
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*Not Including Maturities of July 1, 1946 amounting to \$1,097,000.

EXPENDITURES

	Year Ending June 30, 1946	Total to June 30, 1946
SOUTHERN SUDBURY EMERGENCY SUPPLY	\$0.00	\$638,533.83
WARE AND SWIFT SUPPLY (INCLUDING PORTION UNDER PWA):		
Ware Supply, including Wachusett-Coldbrook Tunnel Section of Quabbin Aqueduct	\$56,256.20	\$15,247,492.24
Coldbrook-Swift Tunnel Section of Quabbin Aqueduct	253.30	5,422,684.86
Quabbin Reservoir	167,835.06	21,247,821.71
Winsor Dam	36,196.30	5,947,498.51
Quabbin Diike	1,618.33	2,905,610.65
SPECIAL INVESTIGATIONS	\$0.00	\$149,609.63
WACHUSETT WATERSHED PROTECTION AND ELIMINATION OF POL- LUTION (INCLUDING BOTH PWA AND WPA PROJECTS)	\$3,490.59	\$423,134.15
HULTMAN AQUEDUCT AND OTHER WORKS, INCLUDING PORTION UNDER PWA:		
Weston Aqueduct Siphons	\$0.00	\$336,169.80
Hultman Aqueduct, Supply Section	10,146.33	10,171,874.44
Hultman Aqueduct, Distribution Section	33,284.92	3,098,705.03
Spot Pond By-Pass and Improvements to Pumping Station	0.00	218,798.74
Enlarging Fells High-Level Distributing Reservoir	0.00	175,444.61
DEFERRED CHARGES TO MAINTENANCE—1946 DEFICIENCY	5,340.67	5,340.67
Total Expenditures	\$314,421.70	\$65,988,718.87

RECEIPTS

Receipts from Sales	\$14,126.63	\$493,551.20
Receipts from Rents	1,472.00	472,490.20
All Other Receipts	45.00	154,310.02
Total Receipts, Construction Fund	\$15,643.63	\$1,120,351.42

DISTRIBUTION OF RECEIPTS

Credited to Annual Water Assessments as Follows:		
To 1928 Assessment, Rents and Sales	\$3,033.03	
To 1929 Assessment, Rents and Sales	24,343.77	
To Assessments 1927 to Date, Interest	282.11	\$0.00
Credited to Construction Fund	15,643.63	1,092,692.51
Total Receipts, Construction Account	\$15,643.63	1,120,351.42

FURTHER EXPENDITURES BY THE METROPOLITAN DISTRICT WATER SUPPLY COMMISSION TO BE
ASSESSED ON CITIES AND TOWNS IN THE METROPOLITAN PARKS DISTRICT UNDER
CHAPTER #59, RESOLVES OF 1945.

FOR NEPONSET RIVER INVESTIGATION

GENERAL OVERHEAD:		
Administration, Clerical salaries		\$36.94
ENGINEERING:		
Salaries, engineering and clerical		1,616.96
Printing and Blueprinting		3.02
Stationery and Office Supplies		2.00
TOTAL NEPONSET RIVER INVESTIGATION		\$1,658.92

EXPENDITURES AND DISBURSEMENTS FOR THE FISCAL YEAR BY THE
METROPOLITAN DISTRICT WATER SUPPLY COMMISSION
FROM MAINTENANCE FUNDS

GENERAL OVERHEAD:	Total to June 30, 1946
Administration, Commissioner's Office—Clerical Salaries	\$3,353.12
Engineering, Headquarters Office—Clerical Salaries	1,226.30
Total General Overhead	<u>\$4,579.42</u>

WARE SUPPLY AND QUABBIN AQUEDUCT

MAINTENANCE AND OPERATION OF WATER SUPPLY WORKS:

Salaries, Engineering and Clerical	\$7,375.40
Labor	9,698.09
Supplies	597.00
Automobile Maintenance	1,007.03
Installed Equipment	1,156.04
Tools and Other Mechanical Equipment	186.03
Rent and Upkeep	2,646.77
Miscellaneous Expense (undistributed)	42.79
Stationery and Office Supplies	42.57
Postage	14.64
Medical and Surgical Services	89.90
Compensation to Labor for Injuries	57.14
Sub Total Maintenance and Operation of Water Supply Works	<u>\$22,913.40</u>

MAINTENANCE OF WATERSHED:

Salaries, Engineering	\$6,101.05
Labor	9,357.09
Supplies	15.76
Automobile Maintenance	1,161.13
Tools and Other Mechanical Equipment	31.05
Rent and Upkeep	203.17
Miscellaneous Expense (undistributed)	34.99
Stationery and Office Supplies	30.93
Printing and Blueprinting	1.76
Postage	11.85
Medical and Surgical Services	30.00
Medical and Surgical Supplies	7.65
Compensation to Labor for Injuries	57.18
Sub Total Maintenance of Watershed	<u>\$17,043.61</u>

GUARDING AND FIRE PROTECTION:

Police Protection—Labor	\$930.90
Fire Protection—Labor	674.99
Supplies	2.26
Automobile Maintenance	7.01
Miscellaneous Expense (undistributed)	8.90
Sub Total Guarding and Fire Protection	<u>\$1,624.06</u>

MAINTENANCE AND OPERATION OF RUTLAND-HOLDEN SEWER:

Salaries, Engineering	\$424.00
Labor	894.58
Supplies	4.00
Use of City of Worcester Sewerage System	749.63
Sub Total Maintenance of Rutland-Holden Sewer	<u>\$2,072.21</u>
Total Ware Supply and Quabbin Aqueduct	<u>\$43,653.28</u>

QUABBIN RESERVOIR

MAINTENANCE AND OPERATION OF WATER SUPPLY WORKS:

Salaries, Engineering and Clerical	\$17,023.98
Labor	17,757.70
Supplies	1,184.42
Automobile Maintenance	1,809.97
Installed Equipment	55.03
Tools and Other Mechanical Equipment	479.97
Rent and Upkeep	6,289.65
Miscellaneous Expense (undistributed)	324.17
Printing and Blueprinting	102.65
Stationery and Office Supplies	74.57
Postage	21.11
Medical and Surgical Services	10.00
Sub Total Maintenance and Operation of Water Supply Works	<u>\$45,133.22</u>

MAINTENANCE OF RESERVOIR AND WATERSHED:

Total to
June 30, 1946

Salaries, Engineering and Clerical	\$2,869.35
Labor	14,501.88
Supplies	839.69
Automobile Maintenance	1,787.98
Boats and Other Floating Equipment	241.81
Tools and Other Mechanical Equipment	1,533.53
Rent and Upkeep	41.75
Miscellaneous Expense (undistributed)	12.61
Stationery and Office Supplies	23.71
Postage	24.03
Medical and Surgical Services	37.00
Medical and Surgical Supplies	2.45
Compensation to Labor for Injuries	112.50

Sub Total Maintenance of Reservoir and Watershed \$22,028.29

GUARDING AND FIRE PROTECTION:

Police Protection:	
Labor	\$312.03
Automobile Maintenance	—578.68
Fire Protection:	
Salaries, Engineering	\$733.70
Labor	7,744.28
Fire Equipment	375.41
Automobile Maintenance	11.65
Supplies	1,836.60
Rent and Upkeep	27.93

Sub Total Guarding and Fire Protection \$10,462.92

MAINTENANCE AND OPERATION OF QUABBIN PARK CEMETERY:

Salaries, Engineering and Clerical	\$2,445.25
Labor	8,772.28
Supplies	444.06
Automobile Maintenance	35.06
Tools and Other Mechanical Equipment	180.27
Rent and Upkeep	37.20
Miscellaneous Expense (undistributed)	0.30
Postage	3.48

Sub Total Maintenance of Quabbin Park Cemetery \$11,917.90
Total Maintenance of Quabbin Reservoir \$89,542.33

HULTMAN AQUEDUCT—SUPPLY SECTION

Salaries, Engineering and Clerical	\$6,895.51
Labor	3,623.10
Automobile Maintenance	855.04
Installed Equipment	2.80
Tools and Other Mechanical Equipment	39.35
Rent and Upkeep	365.61
Miscellaneous Expense (undistributed)	55.49
Stationery and Office Supplies	21.83
Postage	5.00

Total Maintenance of Hultman Aqueduct ,Supply Section \$11,863.73

HULTMAN AQUEDUCT—DISTRIBUTION SECTION

Salaries, Engineering and Clerical	\$16,060.52
Labor	11,265.45
Supplies	108.27
Automobile Maintenance	1,050.69
Tools and Other Mechanical Equipment	156.60
Rent and Upkeep	2,457.88
Miscellaneous Expense (undistributed)	217.96
Printing and Blueprinting	17.49
Stationery and Office Supplies	102.04
Postage	26.10
Medical and Surgical Services	643.25
Compensation to Labor for Injuries	785.73

Total Maintenance of Hultman Aqueduct, Distribution Section \$32,891.98

SUMMARY
WATER SUPPLY MAINTENANCE FUNDS
EXPENDITURES

	Total to June 30, 1946
GENERAL OVERHEAD	\$4,579.42
WARE SUPPLY AND QUABBIN AQUEDUCT	43,653.28
QUABBIN RESERVOIR	89,542.33
HULTMAN AQUEDUCT, SUPPLY SECTION	11,863.73
HULTMAN AQUEDUCT, DISTRIBUTION SECTION	32,891.98
Total Expenditures	<u>\$182,530.74</u>

RECEIPTS

Receipts from Rents	\$1,258.00
Quabbin Park Cemetery:	
Receipts from Sale of Lots	166.25
Interment Fees, etc.	668.35
Miscellaneous (reimbursements for Sewage Disposal)	<u>2,366.51</u>
Total Cash Receipts	\$4,459.11

FINANCIAL STATEMENT OF THE METROPOLITAN DISTRICT
WATER SUPPLY COMMISSION

AS ENLARGED BY CHAPTER 705 OF THE ACTS OF 1945

EXPENDITURES AND DISBURSEMENTS FOR THE FISCAL YEAR AND TOTAL TO
DATE ON ACCOUNT OF METROPOLITAN SEWAGE DISPOSAL

SEWAGE DISPOSAL FUND

Total Appropriated under Chapter 512, Acts of 1939, Chapter 720, Acts of 1941, Chapter 705, Acts of 1945 and Chapter 446, Acts of 1946, from Total of \$15,000,000.00 authorized		\$6,289,907.23
Serial Bonds issued and matured	\$36,000.00	
Serial Bonds outstanding June 30, 1946	1,564,000.00	
Balance of Appropriation available for Issue	4,506,167.96	
	<u>\$6,106,167.96</u>	

EXPENDITURES BY METROPOLITAN DISTRICT COMMISSION (1940-1941)

Contract for Borings	\$36,291.61	
Preliminary Report of Consulting Engineers	147,303.81	
Miscellaneous	143.85	183,739.27
	<u> </u>	
New Sewage Disposal Fund Available		\$6,106,167.96

EXPENDITURES

NUT ISLAND SEWAGE TREATMENT PLANT

GENERAL OVERHEAD:

	Year Ending June 30, 1946	Total to June 30, 1946
Administration, Commissioners' Office	\$14,836.66	\$14,909.06
Engineering, Headquarters Office	114,783.77	218,282.27
	<u> </u>	
Total General Overhead	\$129,620.43	\$233,191.33

ENGINEERING (Field):

Salaries, Engineering and Clerical	\$70,319.14	\$110,665.09
Consultant Expense	242.52	421.96
Legal Expense	800.00	1,355.40
Labor	4,775.21	7,431.05
Engineering Instruments	426.89	439.13
Tools and Equipment	14.07	127.68
Laboratory Equipment	733.69	1,146.69
Furniture and Fixtures	98.71	98.71
Rent and Upkeep	398.35	564.15
Automobile Maintenance	1,643.96	2,574.22
Maintenance of Mechanical Equipment	0.00	70.83
Rental of Equipment	150.00	150.00
Miscellaneous Expense (undistributed)	884.08	1,264.48
Printing and Blueprinting	538.68	697.66
Stationery and Office Supplies	264.70	296.97
Postage	49.58	60.68
Laboratory Supplies	203.67	415.55
Medical and Surgical Services	23.50	223.82
Medical and Surgical Supplies	42.46	42.46
Compensation to Labor for Injuries	19.94	71.36
	<u> </u>	
Total Engineering	\$81,629.15	\$128,117.89

REAL ESTATE:

Legal Expense	\$702.55	\$702.55
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PERMANENT CONSTRUCTION—CONSTRUCTION CONTRACTS:

Contract No. 136, Earthwork Excavation and Fill at and near Nut Island, Quincy	\$276,081.08	\$276,081.08
Contract No. 138, Soundings for Location of Sludge Disposal Line Nut Island, Quincy	15,488.95	15,488.95
Total Permanent Construction	\$291,570.03	\$291,570.03
TOTAL NUT ISLAND SEWAGE TREATMENT PLANT	\$503,522.16	\$653,581.80

CHARLES RIVER BASIN, STORM OVERFLOW SEWER, SOUTH SIDE

GENERAL OVERHEAD:

Engineering, Headquarters Office	\$1,090.10	\$3,962.68
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ENGINEERING (Field):

Salaries, Engineering and Clerical	\$661.52	\$1,537.23
TOTAL CHARLES RIVER BASIN, STORM OVERFLOW SEWER, SOUTH SIDE	\$1,751.62	\$5,499.91

CHARLES RIVER BASIN, STORM OVERFLOW SEWER, NORTH SIDE

GENERAL OVERHEAD:

Engineering, Headquarters Office	\$383.18	\$2,150.91
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ENGINEERING (Field):

Salaries, Engineering and Clerical	\$770.40	\$1,362.70
TOTAL CHARLES RIVER BASIN, STORM OVERFLOW, NORTH SIDE	\$1,153.58	\$3,513.61

ALEWIFE BROOK STORM OVERFLOW SEWER

GENERAL OVERHEAD:

Engineering, Headquarters Office	\$1,593.32	\$1,593.32
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ENGINEERING (Field):

Salaries, Engineering	\$3,223.02	\$3,223.02
Labor	210.60	210.60
Automobile Maintenance	26.93	26.93

Total Engineering	\$3,460.55	\$3,460.55
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TOTAL ALEWIFE BROOK STORM OVERFLOW SEWER	\$5,053.87	\$5,053.87
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SUMMARY

NUT ISLAND SEWAGE TREATMENT PLANT	\$503,522.16	\$653,581.80
CHARLES RIVER BASIN, STORM OVERFLOW SEWER, SOUTH SIDE	\$1,751.62	\$5,499.91
CHARLES RIVER BASIN, STORM OVERFLOW SEWER, NORTH SIDE	\$1,153.58	\$3,513.61
ALEWIFE BROOK STORM OVERFLOW SEWER	\$5,053.87	\$5,053.87
Total Expenditures	\$511,481.23	\$667,649.19

The principal financial items of this report are in agreement with the Comptroller's Books.

Date: January 16, 1947.

Checked by: JOSEPH A. PRENNEY.

FRED A MONCEWICZ,
Comptroller.

CANVASS OF BIDS FOR CONTRACT 133 — OPENED MAY 1, 1946

COMMONWEALTH OF MASSACHUSETTS
METR. DISTR. WATER SUPPLY COMMISSION
(AS ENLARGED)

CONTRACT 133

FOR CONSTRUCTING AN INVERTED PIPE SIPHON ON
THE WACHUSETT AQUEDUCT AT THE ASSABET RIVER
IN THE TOWN OF NORTHBOROUGH, MASSACHUSETTS.

①

A.D. Daddario
58 Chauncy St.
Boston
Mass.

②

Berke-Moore Co. Inc.
11 Boylston St
Brookline
Mass.

③

George M. Byrne
294 Washington St
Boston
Mass.

④

Marson Cons. Co. Inc.
38 Kent St
Somerville
Mass.

⑤

Coleman Bros. Corp.
40 Central St
Boston
Mass.

⑥

William Casey & Sons Inc.
52 Prospect Drive
Yonkers
N. Y.



UNIT NO.	DESCRIPTION	UNIT	QUANTITY	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT
1	Earth Excavation	Cu.Yd.	10,000	2.00	20,000.00	3.00	30,000.00	3.00	30,000.00	3.00	30,000.00	3.00	30,000.00	7.57	75,700.00
2	Rock Excavation	Cu.Yd.	500	2.00	1,000.00	10.00	5,000.00	8.00	4,000.00	13.00	6,500.00	6.00	3,000.00	15.40	7,700.00
3	Refill and Embankment	Cu.Yd.	6,000	1.00	6,000.00	.50	3,000.00	1.50	9,000.00	3.00	18,000.00	1.00	6,000.00	2.24	13,440.00
4	Compacted Refill and Embankment	Cu.Yd.	1,500	2.00	3,000.00	2.00	3,000.00	2.00	3,000.00	5.00	7,500.00	1.50	2,250.00	3.22	4,830.00
5	Soil Dressing and Grassing	Cu.Yd.	500	4.00	2,000.00	3.00	1,500.00	4.00	2,000.00	8.00	4,000.00	3.00	1,500.00	6.43	3,215.00
6	Crushed Stone or Screened Gravel	Cu.Yd.	500	4.00	2,000.00	3.00	1,500.00	4.00	2,000.00	4.00	2,000.00	4.00	2,000.00	5.78	2,890.00
7	Paving	Cu.Yd.	60	10.00	600.00	10.00	600.00	12.00	720.00	10.00	600.00	10.00	600.00	22.50	1,350.00
8	Steel-plate Pipe with Mortar Lining	Lin.Ft.	400	165.00	66,000.00	130.00	52,000.00	137.50	55,000.00	200.00	80,000.00	175.00	70,000.00	153.00	61,200.00
9	Interior Forms for Concrete Conduit	Lin.Ft.	150	30.00	4,500.00	20.00	3,000.00	50.00	7,500.00	40.00	6,000.00	20.00	3,000.00	58.60	8,790.00
10	Concrete Envelope in Siphon	Cu.Yd.	1,500	15.00	22,500.00	20.00	30,000.00	30.00	45,000.00	15.00	22,500.00	30.00	45,000.00	15.42	23,130.00
11	Concrete (except Items 8 and 10)	Cu.Yd.	30	15.00	450.00	40.00	1,200.00	30.00	900.00	15.00	450.00	30.00	900.00	45.00	1,350.00
12	Reinforcing Steel	Lb.	25,000	.10	2,500.00	.08	2,000.00	.10	2,500.00	.10	2,500.00	.10	2,500.00	.13	3,250.00
13	Portland Cement	Bbl.	2,500	3.00	7,500.00	3.50	8,750.00	3.25	8,125.00	2.80	7,000.00	3.00	7,500.00	3.44	8,600.00
14	Miscellaneous Steel and Iron	Lb.	10,000	.20	2,000.00	.10	1,000.00	.20	2,000.00	.20	2,000.00	.20	2,000.00	.19	1,800.00
15	Galvanizing	Lb.	1,000	.10	100.00	.25	250.00	.05	50.00	.10	100.00	.50	500.00	.32	320.00
16	Caring for and setting Metal Work furnished by the Commission.	Lb.	2,000	.20	400.00	.05	100.00	.20	400.00	.20	400.00	.15	300.00	.13	260.00
17	Road Surfacing	Sq.Yd.	80	3.00	240.00	5.00	400.00	4.00	320.00	3.00	240.00	4.00	320.00	4.50	360.00
18	Wooden Sheeting ordered left in place.	M.Ft. B.M.	10	150.00	1,500.00	150.00	1,500.00	100.00	1,000.00	100.00	1,000.00	150.00	1,500.00	38.60	386.00
19	Assabet River Crossing	Lump.S.		11,000.00	11,000.00	25,000.00	25,000.00	15,000.00	15,000.00	25,000.00	25,000.00	45,000.00	45,000.00	44,227.00	44,227.00
20	Connections to Wachusett Aqueduct	Lump.S.		4,000.00	4,000.00	25,000.00	25,000.00	15,000.00	15,000.00	18,000.00	18,000.00	37,500.00	37,500.00	32,377.00	32,377.00
21	Cleaning Up	Lump.S.		1,500.00	1,500.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	2,570.00	2,570.00
Sub-Totals (Items 1 to 21 incl.)					158,790.00		195,800.00		204,515.00		234,790.00		262,370.00		297,845.00
22	Furnishing Performance Bond, Rate per \$1,000 Not over \$15.00			10.00	1,587.90	10.00	1,958.00	10.00	2,045.15	12.50	2,934.88	10.00	2,623.70	15.00	4,467.67
Totals					\$160,377.90		\$197,758.00		\$206,560.15		\$237,724.88		\$264,993.70		\$302,312.67
Bid Security					B.B. \$10,000.00		C.C. \$10,000.00		BB. \$12,000.00		BB. \$17,500.00		BB. \$15,000.00		C.C. \$15,000.00



Contract awarded June 25, 1946
Contract executed August 28, 1946

Tabulated by C.R.B. & J.F.C.

Traced by C.R.B.

Checked by L.F.H.

CANVASS OF BIDS FOR CONTRACT 136 — OPENED SEPT. 27, 1945.

COMMONWEALTH OF MASSACHUSETTS
METR. DISTR. WATER SUPPLY COMMISSION
(AS ENLARGED)

CONTRACT 136

FOR EARTHWORK—EXCAVATION AND FILL AT AND
NEAR NUT ISLAND IN THE CITY OF QUINCY,
MASSACHUSETTS

①
V. Barletta Co.
10 Whipple Ave.
Roslindale,
Mass.



②
Henry N. Worthington
and Co.,
159 Newport Ave.
Quincy, Mass.

③
M. DeMatteo
Construction Co.,
200 Hancock St.,
Quincy, Mass.

④
Marinucci Bros.
and Co.,
51 Ceylon St.,
Dorchester,
Mass.

⑤
C and R
Construction Co.,
Incorporated,
75 Bradeen St.,
Roslindale,
Mass.

⑥
Coleman Bros. Corp.
245 State St.,
Boston, Mass.
and
Bay State Dredging
& Construction Co.,
62 Condon St.,
East Boston, Mass.

⑦
Dooley Bros., Inc.,
39 George St.,
Roxbury,
Mass.

⑧
B. Perini & Sons,
Incorporated,
Framingham,
Mass.

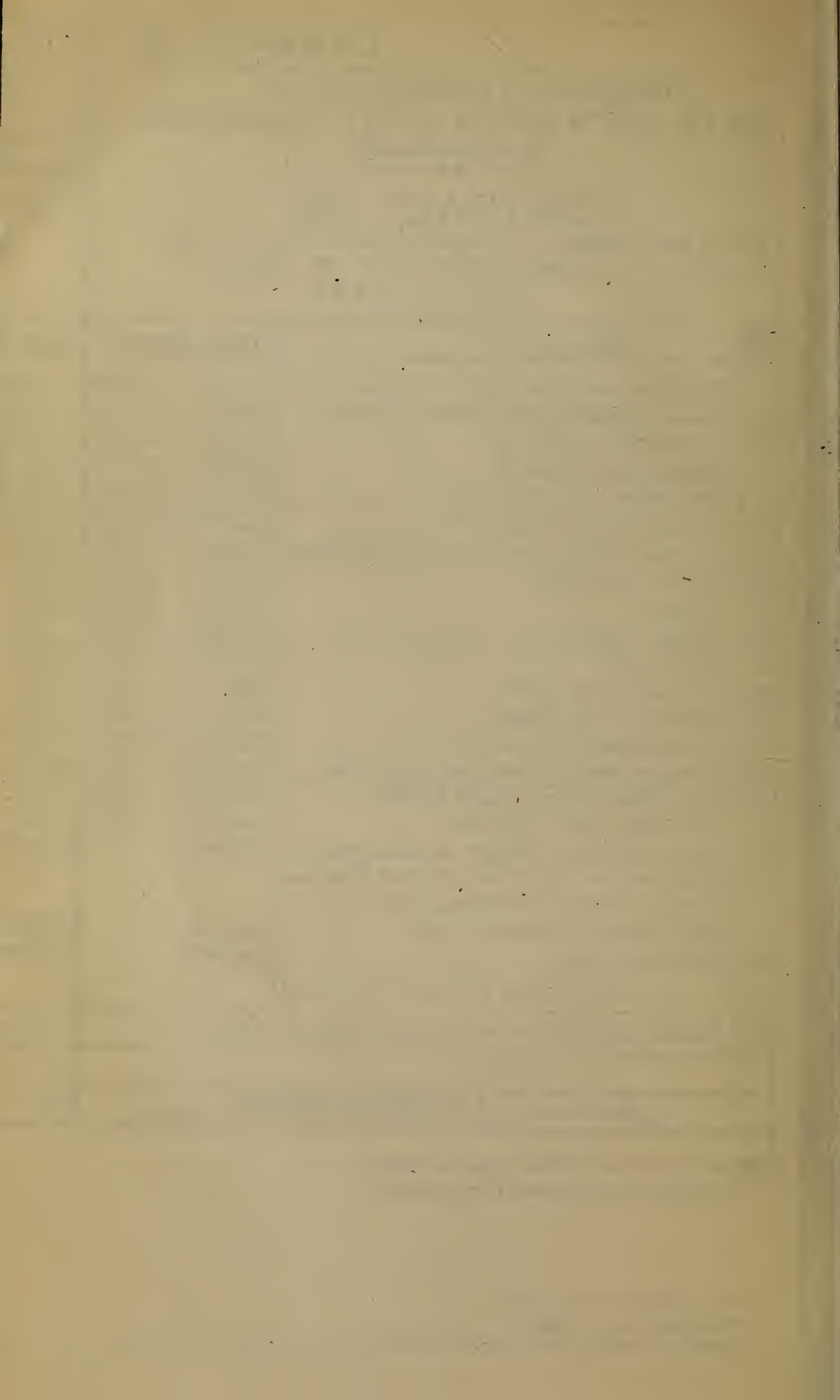
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT
1	Stripping and Storage of Topsoil	Cu. Yd.	2000	1.00	2,000.00	0.50	1,000.00	0.30	600.00	1.00	2,000.00	0.75	1,500.00	1.00	2,000.00	3.00	6,000.00
2	Removing Existing Stonework Protection	Cu. Yd.	10,000	1.00	10,000.00	2.00	20,000.00	2.00	20,000.00	3.00	30,000.00	2.20	22,000.00	4.00	40,000.00	3.00	30,000.00
3	Excavation, Class A	Cu. Yd.	35,000	1.00	35,000.00	0.60	21,000.00	0.42	14,700.00	0.70	24,500.00	0.80	28,000.00	1.00	35,000.00	0.80	28,000.00
4	Excavation, Class B	Cu. Yd.	30,000	0.30	9,000.00	1.00	30,000.00	0.18	5,400.00	0.50	15,000.00	0.90	27,000.00	0.25	7,500.00	0.20	6,000.00
5	Embankment, Class A	Cu. Yd.	30,000	1.10	33,000.00	0.60	18,000.00	0.32	9,600.00	0.60	18,000.00	0.45	13,500.00	0.50	15,000.00	0.60	18,000.00
6	Embankment, Class B	Cu. Yd.	250,000	1.10	275,000.00	1.00	250,000.00	1.05	262,500.00	1.27	317,500.00	1.34	335,000.00	1.55	387,500.00	1.00	250,000.00
7	Crushed Stone and Screened Gravel	Cu. Yd.	5,000	2.50	12,500.00	3.25	16,250.00	2.95	14,750.00	3.00	15,000.00	2.90	14,500.00	3.50	17,500.00	5.00	25,000.00
8	Sand or Gravel	Cu. Yd.	16,000	1.10	17,600.00	1.50	24,000.00	1.75	28,000.00	1.50	24,000.00	2.75	44,000.00	2.25	36,000.00	2.50	40,000.00
9	Riprap	Cu. Yd.	12,000	3.00	36,000.00	3.50	42,000.00	6.00	72,000.00	4.00	48,000.00	3.45	41,400.00	2.00	24,000.00	4.50	54,000.00
10	Rough Paving	Cu. Yd.	4,500	3.00	13,500.00	8.00	36,000.00	8.00	36,000.00	6.00	27,000.00	8.00	36,000.00	7.50	33,750.00	7.00	31,500.00
11	Concrete	Cu. Yd.	40	35.00	1,400.00	25.00	1,000.00	40.00	1,600.00	8.00	320.00	50.00	2,000.00	50.00	2,000.00	50.00	2,000.00
12	Portland Cement	Bbl.	100	3.50	350.00	4.00	400.00	18.00	1,800.00	3.50	350.00	3.50	350.00	4.00	400.00	4.00	400.00
13	Reinforcing Steel	Pound	2,000	0.10	200.00	0.10	200.00	0.15	300.00	0.15	300.00	0.15	300.00	0.10	200.00	0.15	300.00
14	Miscellaneous Steel and Iron	Pound	30,000	0.12	3,600.00	0.10	3,000.00	0.09	2,700.00	0.12	3,600.00	0.10	3,000.00	0.20	6,000.00	*14.00	420,000.00
15	Precast Reinforced-Concrete Pipe	Lin. Ft.	200	30.00	6,000.00	15.00	3,000.00	22.00	4,400.00	18.00	3,600.00	40.00	8,000.00	25.00	5,000.00	20.00	4,000.00
16	Tile Pipe, 12-Inch and Under	Lin. Ft.	200	5.00	1,000.00	2.50	500.00	1.25	250.00	1.00	200.00	1.50	300.00	4.00	800.00	2.00	400.00
17	Tile Pipe, Over 12-Inch	Lin. Ft.	100	6.00	600.00	3.50	350.00	2.50	250.00	2.50	250.00	2.00	200.00	6.00	600.00	4.00	400.00
18	Miscellaneous Timber and Lumber	M.B.M.	5	200.00	1,000.00	300.00	1,500.00	250.00	1,250.00	300.00	1,500.00	260.00	1,300.00	300.00	1,500.00	300.00	1,500.00
19	Stonework on Drain Outlet, Disposal of Pier, Removal of Boathouse and Relocation of Pipe Lines	Lump S.		15,000.00	15,000.00	12,000.00	12,000.00	17,300.00	17,300.00	5,000.00	5,000.00	11,000.00	11,000.00	26,500.00	26,500.00	6,000.00	6,000.00
20	Cleaning Up	Lump S.		2,500.00	2,500.00	1,000.00	1,000.00	400.00	400.00	1,500.00	1,500.00	2,500.00	2,500.00	1,000.00	1,000.00	1,000.00	1,000.00
Sub-Totals (Items 1 to 20 incl.)					475,250.00		481,200.00		493,800.00		537,620.00		591,850.00		642,250.00		924,500.00
21	Furnishing Performance Bond, Rate per \$1,000			7.50	3,564.38	¢ 1.15	553.38	10.00	4,938.00		8,064.30	10.00	5,918.50	11.00	7,064.75	*15.00	13,867.50
Totals					\$478,814.38		\$481,753.38		\$498,738.00		\$545,684.30		\$597,768.50		\$649,314.75	*	\$938,367.50
Bid Security B.B. INDICATES BID BOND C.C. INDICATES CERTIFIED CHECK				C.C.	\$30,000.00	B.B. 5% of above		C.C.	\$25,000.00	B.B. 5% of above		C.C.	\$30,000.00	C.C.	\$7,000.00 \$30,000.00	B.B. 5% of above	B.B. 5% of above

★ Contract awarded Sept. 27, 1945
Contract executed Oct. 18, 1945

¢ The extended total submitted in the Contract Proposal indicated that the Bidder probably meant \$1.50 per 1000.

* Bidder probably meant ¢.14 per pound for Item 14, instead of \$14.00 which was the unit price bid written in words.
\$15.00 per thousand used, as the unit price bid, as written in words, exceeded the stipulated maximum.

Tabulated by: E.L.S. ---
Checked by: TEL ---



CANVASS OF BIDS FOR CONTRACT 137 — OPENED JULY 31, 1946

COMMONWEALTH OF MASSACHUSETTS
METR. DISTR. WATER SUPPLY COMMISSION
AS ENLARGED

CONTRACT 137

FOR THE CONSTRUCTION OF THE AERATION AND SEDIMENTATION TANKS; THE INFLUENT AND EFFLUENT CONDUITS; AND THE GRIT CHANNELS AND MAIN BUILDING SUBSTRUCTURE OF THE NUT ISLAND SEWAGE TREATMENT PLANT AT NUT ISLAND IN THE CITY OF QUINCY, MASSACHUSETTS

(1)
V. Barletta Co.
10 Whipple Ave.
Roslindale
Mass.



(2)
Henry N.
Worthington
and Co.
159 Newport Ave.
Quincy, Mass.

(3)
Marinucci Bros.
and Co.
51 Ceylon St.
Dorchester
Mass.

(4)
Gahagan
Construction
Corporation
11 Pemberton Sq.
Boston (8)
Mass.

(5)
M. DeMatteo
Construction Co.
200 Hancock St.
Quincy, Mass.

	DESCRIPTION	UNIT	QUANTITY	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT
1	Excavation	Cu. Yd.	40,000	1.50	60,000.00	3.00	120,000.00	1.80	72,000.00	2.20	88,000.00	1.00	40,000.00
2	Refill and embankment, unconsolidated	Cu. Yd.	25,000	.50	12,500.00	2.00	50,000.00	1.10	27,500.00	.33	8,250.00	.55	13,750.00
3	Refill and embankment, consolidated	Cu. Yd.	3,000	1.00	3,000.00	3.00	9,000.00	1.30	3,900.00	1.10	3,300.00	1.00	3,000.00
4	Crushed stone and screened gravel	Cu. Yd.	2,000	3.50	7,000.00	4.50	9,000.00	2.50	5,000.00	5.50	11,000.00	4.00	8,000.00
5	Gravel	Cu. Yd.	500	2.00	1,000.00	2.25	1,125.00	2.00	1,000.00	3.85	1,925.00	3.00	1,500.00
6	Concrete in Sedimentation and Aeration Tanks	Cu. Yd.	10,000	33.50	335,000.00	26.00	260,000.00	34.00	340,000.00	31.35	313,500.00	73.29	732,900.00
7	Concrete in Influent and Effluent Conduits	Cu. Yd.	4,300	33.50	144,050.00	28.00	120,400.00	34.00	146,200.00	37.95	163,185.00	79.95	343,785.00
8	Concrete in Grit Channels and Main Building Substructure	Cu. Yd.	5,700	33.50	190,950.00	26.00	148,200.00	39.00	222,300.00	32.45	184,965.00	68.68	391,476.00
9	Expansion and vibration joint filler	Sq. Ft.	1,500	.30	450.00	.30	450.00	1.00	1,500.00	1.65	2,475.00	.587	880.50
10	Rubbed Finish	Sq. Ft.	18,000	.15	2,700.00	.15	2,700.00	.20	3,600.00	.22	3,960.00	.26	4,680.00
11	Portland cement	Bbl.	32,000	3.00	96,000.00	3.75	120,000.00	3.10	99,200.00	3.63	116,160.00	3.73	119,360.00
12	Reinforcing steel	Pound	2,500,000	.6½	1,625,000.00	.08	200,000.00	.08	200,000.00	.12	300,000.00	.087	217,500.00
13	Light steel work	Pound	175,000	.30	52,500.00	.45	78,750.00	.28	49,000.00	.39	68,250.00	.294	51,450.00
14	Cast iron pipe and specials larger than 6 inches	Pound	32,000	.15	4,800.00	.19	6,080.00	.17	5,440.00	.22	7,040.00	.595	19,040.00
15	Cast iron pipe and specials 6 inches and under	Pound	15,000	.15	2,250.00	.18	2,700.00	.16	2,400.00	.28	4,200.00	.465	6,975.00
16	Miscellaneous ferrous metals	Pound	5,000	.60	3,000.00	.75	3,750.00	.52	2,600.00	.77	3,850.00	.26	1,300.00
17	Galvanizing	Pound	160,000	.05	8,000.00	.08	12,800.00	.09	14,400.00	.11	17,600.00	.07	11,200.00
18	Miscellaneous non-ferrous metals	Pound	12,000	1.10	13,200.00	1.55	18,600.00	1.00	12,000.00	1.38	16,560.00	1.50	18,000.00
19	Miscellaneous lumber	M.f.b.m.	15	300.00	4,500.00	230.00	3,450.00	200.00	3,000.00	550.00	8,250.00	533.00	7,995.00
20	Tile pipe, 8 inches and under	Lin. Ft.	700	5.00	3,500.00	1.50	1,050.00	2.00	1,400.00	2.20	1,540.00	1.33	931.00
21	Tile pipe, 10 inches to 15 inches inclusive	Lin. Ft.	500	5.00	2,500.00	3.00	1,500.00	3.00	1,500.00	4.40	2,200.00	2.80	1,400.00
22	Precast reinforced concrete pipe	Lin. Ft.	900	5.00	4,500.00	4.00	3,600.00	5.00	4,500.00	4.40	3,960.00	3.00	2,700.00
23	Transporting, caring for and setting metal work and equipment furnished by the Commission	Pound	1,200,000	.03	36,000.00	.08	96,000.00	.08	96,000.00	.06	72,000.00	.06	72,000.00
24	Connections to the existing High Level Sewer	Lump S.		10,000.00	10,000.00	7,500.00	7,500.00	11,000.00	11,000.00	15,400.00	15,400.00	5,000.00	5,000.00
25	Electrical conduits	Lump S.		8,000.00	8,000.00	8,077.00	8,077.00	9,000.00	9,000.00	9,900.00	9,900.00	7,743.00	7,743.00
26	Cleaning up	Lump S.		2,500.00	2,500.00	5,000.00	5,000.00	6,000.00	6,000.00	10,430.00	10,430.00	5,000.00	5,000.00
	Sub-Totals (Items 1 to 26 incl.)				1,170,400.00		1,289,732.00		1,340,440.00		1,437,900.00		2,087,565.50
27	Furnishing Performance Bond, Rate per \$1,000			8.00	9,363.20		19,345.98	15.00	20,106.60	15.00	21,568.50	10.00	20,815.65
	Totals				1,179,763.20		1,309,077.98		1,360,546.60		1,459,468.50		2,108,441.15
	Bid Security				C.C. 70,000.00		C.C. *65,000.00		B.B. 75,000.00		B.B. 87,500.00		B.B. 110,000.00

★ Contract awarded July 31, 1946
Contract executed August 27, 1946

Tabulated by I.E.P.
Traced by C.J.H.
Checked by K.R.S. + V.C.S.

* Bid bond substituted for Certified Check Aug. 15, 1946, Maryland Casualty Company \$65,000.00

FILE CONT. 137 5.22 N-1

Acc. 50,526

